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Effectiveness of short-term emergency response after Hurricane Irma in Saint Martin

A comparative case study between France and the Netherlands

Master Crisis and Security Management

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Chapter 1. Introduction

Hurricane Irma hit Saint Martin on September 6th, 2017, and was a devastating category five hurricane. It was the strongest storm recorded in the Caribbean region since 2005, and it was part of the most destructive hurricane season ever experienced in the Caribbean region (Gray, 2018). The island that suffered the most damage from Irma was Saint Martin (PAHO, 2017). However, the damage of Irma was also clearly visible in Saint-Barthelemy, Barbuda, and Anguilla (Seraphin, 2017: p.21). Hurricane Irma is interesting to research for a couple of reasons. Irma covered a large geographical area. It was one of the most destructive hurricanes in recent history because there was an extreme variation difference in the affected population demographic between the regions in the Caribbean (Gray, 2018). This thesis cannot research all the affected regions in the Caribbean area; therefore, the island of Saint Martin is selected as the focus of research.

When Hurricane Irma hit Saint Martin almost three years ago, the French and the Dutch vowed for swift emergency response. Hurricane Irma caused billions of dollars in damage across the 34-square-mile island and killing thirteen people (ABC News, 2017). Fortunately, the number of fatalities was limited, but the consequences for the island were enormous. About 90% of the buildings suffered moderate damage; the impact on the built environment on Saint Martin was significant (PAHO, 2017). The most common observed losses were damage to the roofs and exterior wall cladding, windows, and dislodged exterior doors. It impacted coastal constructions (due to poor maintenance leading to corroded steel and rotted timber) (PAHO, 2017). Over 30% of the houses had collapsed entirely, and another 20% were severely damaged (Wijkhuijs, Domrose & Van Duin, 2018: p.3). Irma destroyed Saint Martins' main airports (both sides of the island have an airport), blocked all the ports, and shut down the island's essential tourism for months (Wijkhuijs et al., 2017: p.205). Communication and information supply to and from the island was difficult because communication masts were down (Wijkhuijs et al., 2018: p.3). After Irma, it became clear that Saint Martin needed to be rebuilt and be made more resistant to more powerful hurricanes in the future.

Aid to Saint Martin came from both France and The Netherlands but in different ways. Immediately after Hurricane Irma blasted over the island, President Emmanuel Macron of France promised a speedy recovery for the French side (Semple, 2019). He said: "*Saint-Martin will be reborn, I am committed. We will do it quickly, we will do it well, and we will do it better*" (Semple, 2019). However, Saint-Martin has known as slow recovery since Macron's statement. Even though France gave a half-billion dollars of aid, Saint-Martin encountered challenges

beyond the size of financial aid packages. Irma showed Saint-Martin's rigid racial and class tensions that are in the way of effective emergency response.

Right after Irma hit Sint Maarten, the Dutch Prime Minister Mark Rutte promised to help Sint Maarten in their recovery, but not at all costs. Rutte said: "*We are pulling the wallet for emergency aid. That costs an awful lot of money. We are not going to be thrifty about it, but I'm not going to pull the purse right now. We've got to figure out what's needed first*" (Nu.nl, 2017). The day after Irma, the Dutch government sent emergency relief to meet the population's basic needs. Like housing, food, and drinking water, maintaining public order and repairing infrastructure that was needed to allow relief support supplies to be delivered (Ministry of the Interior and kingdom relations, 2017). Most communication with the outside world was going through the military since Irma cut off electricity on Sint Maarten. Moreover, the Dutch government allocated five hundred fifty million euros for the reconstruction of the island (Algemene Rekenkamer, 2018: p.6).

Hurricane Irma revealed distinctions in culture and governance between France and the Netherlands (Semple, 2019). The consensus on both sides of the island is that the Dutch part has recovered more quickly (Semple, 2019). The consensus is based on a higher percentage of hotel rooms that have opened again in Sint Maarten after Irma, due to the laissez-faire attitude about the rebuilding process (Semple, 2019). On the Dutch side, private funds associated with tourism drove the rebuilding, which has always been a more significant source of income for Sint Maarten than that of Saint-Martin (Semple, 2019).

When there is a crisis, like in Saint Martin after Hurricane Irma, those in power often promise to make it right. That is where this thesis comes in. It will focus on assessing the effectiveness of emergency response from France and The Netherlands after Hurricane Irma struck Saint Martin.

This brings us to the following research question:

'Why do France and the Netherlands have different outcomes in their short-term emergency response in Saint Martin after hurricane Irma in 2017?'

Saint Martin is an extraordinary case to research since it is one island divided by two countries with their constituency. This allows researching one island, occupied by two different European countries. Nevertheless, there still is a difference in the effectiveness of the emergency response between France and The Netherlands, and that is what this thesis is going to explain.

The following expectations are expected to be found:

- The French government had a less effective emergency response after hurricane Irma
- The Dutch government had a more effective emergency response after hurricane Irma

Both of these expectations are based on the expectations of media reports from various outlets – newspapers, television and social media - after Irma. The media displayed that the French government had a harder time with their short-term emergency response and that the Dutch government had a relatively easier time setting up their emergency response. It is expected that there is a bias here, since the information about the emergency response from both the French and Dutch government was mostly consumed through Dutch media outlets.

This thesis's theoretical focus is on the short-term emergency response and effectiveness of the emergency response – in terms of success or failure. To find out the exact differences in emergency response from France and The Netherlands, I will be conducting qualitative research with the help of content analysis. The end of the introduction leads us into the main body of the thesis. The first chapter provides an overview of the central literature on emergency response and effectiveness. The second chapter presents the methodology, which is followed by the third chapter containing the analysis. The final chapter of the thesis is the conclusion answering the research question.

Background information

This thesis is about Saint Martin. Before the thesis dives into the literature, methodology, and analysis, some background information about Saint Martin is necessary to understand the comparison between the French and the Dutch government in their emergency response after hurricane Irma hit Saint Martin in 2017.

The most crucial aspect of Saint Martin is that it is a divided island. The island is divided between two countries- France and the Netherlands. Both parts of Saint Martin have a different bond with their comparative homelands. Saint-Martin (written with a hyphen, to distinguish that this is the section of Saint Martin - without a hyphen) belongs to France and is part of the Overseas Collectivities. In contrast, Sint Maarten belongs to the Netherlands and has an autonomous status within the Kingdom of the Netherlands.

Figure 1 shows the location of Saint Martin in the Caribbean, and figure 2 shows the division of the island and which part belongs to which country. These two figures will give a good understanding of the region Saint Martin lies in and its division. The division is the most important for this thesis because it researches the effectiveness of the emergency response from both the French government and the Dutch government after hurricane Irma. Figure 2 shows precisely how part France had to set up their emergency and in which part the Netherlands had to.

The second part is about each part of the island and how they connect to France and the Netherlands. While also stating their legal and political status with regards to the European Union.



Figure 1. Location of Saint Martin.
Source: Encyclopaedia Britannica



Figure 2. Division of Saint Martin.
Source: Wikipedia

Saint-Martin - French side

The French part of Saint Martin is called Saint-Martin. Moreover, this part is an Overseas Collectivity of the French Republic. Before 2003 Saint-Martin belonged to the French overseas department of Guadeloupe. Saint-Martin became an Overseas Collectivity after 2003 in a referendum among the citizens of the island. They voted in favor of becoming a collective with special status. Together with Saint- Barthelemy, Saint-Martin is part of the European Union (EU) as an Overseas Collectivities of France. Overseas Collectivities of France are not automatically part of the EU. They have to agree to become part of the EU actively. After 2003 Saint-Martin actively chose to stay within the EU, while Saint-Barthelemy decided not to be a part of the EU (European Central Bank, 2018).

Saint-Martin has the EU status of an Outermost Region (European parliament, 2018). Their status means that they are an integral part of the European Union. All the EU laws, rights, and duties associated with EU membership apply to Saint-Marten (European Commission, n.d.). Most of the outermost regions face challenges that 'normal' (meaning, non-Caribbean island countries) do not face. The challenges, such as - remoteness, insularity, small size, difficult geographical location, (extreme) climate change, and economic dependence on several products - that Saint-Martin and other Outermost Regions face give them special measures and derogations in EU legislation.

The French president, currently Emmanuel Macron, is the chief of Saint-Martin and is represented by a local prefect. The relationship with France is relatively close; for example, the defense system of Saint-Martin is France's responsibility. In general, the rules in Saint-Martin are the same as in the departments and regions in France (European Parliament, 2018).

Sint Maarten – Dutch side

The political situation of Sint Maarten differs from that of Saint-Martin. Until 2010 Sint Maarten was part of the Dutch Antilles, and after a referendum, Sint Maarten became an autonomous country within the Kingdom of the Netherlands (Rijksoverheid, 2010). Sint Maarten has its government, education, and legal system, independent of that from the Kingdom of the Netherlands (Algemene Rekenkamer, 2018). The Dutch government can only give Sint Maarten advice or support if they ask for it (Righton & Meijer, 2017). The Dutch government cannot make any decisions for Sint Maarten and cannot intervene how they see fit since Sint Maarten is autonomous (Righton & Meijer, 2017). The Dutch government is only responsible for guaranteeing legal security, good governance, and the observance of human rights on the Caribbean parts of the Kingdom of the Netherlands (Rijksoverheid, u.d.).

Sint Maarten is an independent country within the Kingdom of the Netherlands; this means that they are not part of the European Union. Sint Maarten has a special status within the EU since it is part of the Overseas Countries and Territories (OCT) (European Commission, 2019), which means that they are not part of EU territory or the single market and not bound by the EU's *acquis Communautaire* – the treaties, legislation, legal acts and case-law making up the body of European Union law and binding on all Member States and their citizens (Europa Nu, n.d.). Since many of OCT's face economic challenges, they choose to cooperate with the EU to boost education, digital development, and tourism. Under certain conditions, the OCT's can also access EU instruments, such as humanitarian aid. Sint Maarten faces the same challenge as Saint-Martin - remoteness, insularity, small size, difficult geographical location, (extreme) climate change, and economic dependence on several products – therefore, they are in some way dependent on aid from the EU and the Netherlands.

Sint Maarten is an independent country, but in reality, it heavily relies upon money provided by the Dutch government. The Dutch government ought to have a more direct influence on Sint Maarten, due to corruption in the island's government. After hurricane Irma, the Dutch influence became even more apparent since Sint Maarten could not get money from The Netherlands if they did not abide by conditions set out by the Dutch government.

Chapter 2. Theoretical framework

The research question in this thesis is: *'Why do France and the Netherlands have different outcomes in their short-term emergency response in Saint Martin after hurricane Irma in 2017?'.* The central theme is the short-term emergency response. In this thesis the researcher demarcated short-term emergency response up to six weeks after Irma hit. The short-term emergency response is central in this research, because the effects of Irma are still present in 2020, and there needed to be a clear demarcation of what this thesis is researching and where the research is ending. The emergency response phase consists of five different phases: *rescue*, *relief*, *recovery*, *reconstruction*, and *preparedness*. The only phases that are considered short-term by the researcher in this thesis are *rescue* and *relief* because the rescue phase started when the disaster happened up until 2-3 days after, and the relief phase lasts about six weeks. When actors go over the six-week line with emergency response, the 'emergency' aspect is no longer present, and problems that arise are most likely structural or long-term. The second variable researched is effectiveness of emergency response. Effectiveness is difficult to research when not given a clear definition and demarcation. Therefore, this thesis uses success and failure as the markers of effectiveness (Cutter, 2003: p.440). Between success and failure are also some definitions that are set out, in order to have a more defined definition of effectiveness.

2.1 Emergency response

According to the UNISDR (2009: p.24), emergency response is defined as: *"The provision of emergency services and public assistance during or immediately after a disaster to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs to the people affected."* Emergency response focusses on the immediate and short-term needs of the people affected. Coordinating an effective emergency response after a natural hazard, or any kind of hazard is essential for minimizing the emergent danger people are in. The impact achieved in the early days of the response is mostly a test of previously planned local and national preparedness and mitigation measures (WHO, 2002: p.42). Emergency response is a process that moves in a cycle – the emergency response cycle (see figure 1.). It involves repeated assessment, planning, action, and review to respond to the affected population (WHO, 2002). The handling of the emergency response has consequences for post-disaster recovery and future development possibilities. If the emergency response is effective, the better, future development possibilities are. What effective emergency response is will follow shortly.

To mitigate the consequences of a natural hazard, actors in charge of rescue and relief need to respond fast. Many of these actors have never worked together. The collaboration between all the actors involved in the emergency response often is accompanied by stress and uncertainty. The more actors are involved, the harder the emergency response gets. Since actors have different agendas, they could be based worldwide and are not used to working together (Ansell, Boin & Keller, 2010: p.195). According to Ansell, Boin & Keller (2010: p.195), this poses a challenge on the management level - the challenge is to rapidly share information and coordinate actions across boundaries between organizations, professions, and political jurisdictions.

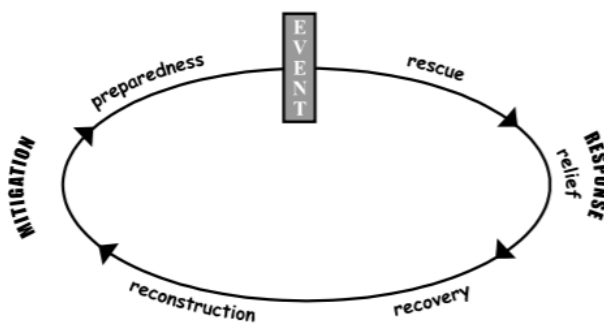


Figure 1 Schematic representation of the emergency response cycle

Source: Cutter, 2003: p.440

Multi-level governance in emergency response

Multi-level governance is relevant to explain for Saint Martin since both Sint Maarten and Saint-Martin have a different relationship with France and the Netherlands. Saint-Martin is an overseas collectivity and, therefore, part of the Republic of France. Many legal, governmental and education decisions are not made autonomously in Saint-Martin. The French president, currently Emmanuel Macron, is the chief of state of Saint-Martin and is represented by a local prefect. The relationship with France is relatively close; for example, the defense system of Saint-Martin is the responsibility of France. Saint-Martin, in general, is based on the same rules as the departments and regions in France (European Parliament, 2018).

Sint Maarten, on the other hand, has an autonomous status within the Kingdom of the Netherlands. Autonomy means that Sint Maarten has its government, education, and legal system, independent of that from the Kingdom of the Netherlands (Algemene Rekenkamer, 2018). The Dutch government can only give Sint Maarten advice or support if they ask for it (Righton & Meijer, 2017). The Dutch government cannot make any decisions for Sint Maarten or intervene in how they like (Righton & Meijer, 2017). The Dutch government is only

responsible for guaranteeing legal security, good governance, and the observance of human rights on the Caribbean parts of the Kingdom of the Netherlands (Rijksoverheid, u.d.).

Since this 'territorial' part is Saint Martin, there are multiple layers to the governance system. It is worth researching to enlighten what the different multi-level ties are between the French and Dutch government and their important territorial parts.

Each level of government is involved in the emergency response. Some emergency responsibilities are carried out by all the levels, and some responsibilities are specific to each level. The local level has the first line of responsibility because when a disaster strikes, it usually strikes in one place (McLoughlin, 1985). The other levels – state and territorial – only come in when the damage is severe and widespread. Local governments must develop an emergency response plan to meet their responsibilities to protect their people's protection and safety. The local emergency response plan is housed in an agency that reports to a mayor or city manager (McLoughlin, 1985). On the local level, the emergency response plan focusses on preparedness, response, and recovery. This is mostly the case for autonomous countries, like Sint Maarten. The Dutch government could not intervene in every phase of the emergency response because Sint Maarten is an autonomous country within the Netherlands' Kingdom, which houses much responsibility when it comes to crisis management and emergency response. In the case of Saint-Martin, the local emergency response plan is surpassed by the national emergency response plan (ORSEC), since crisis management and emergency response are state responsibilities. The mayor in France has some responsibility for the crisis management, but the state (*préfet* – a local representation of the French state at the level of a department/territory) is more powerful and can overrule the local emergency response plans.

The state level's responsibilities are in ways like that of the local level. The state must also have an active organization and develop and maintain emergency response plans as well. Most states have a single agency that takes responsibility for emergency preparedness and response activities (McLoughlin, 1985: p.165). However, the state has responsibilities that are different from that of the local level. The state-level assess governmental resources and acquisition. It also gives guidance and assistance to the governments on the local level in emergency programs (McLoughlin, 1985).

The aims of emergency response

It is difficult to define a set of priorities for emergency response that are universally applicable (WHO, 2002: p.49). Every emergency comes with its own specific set of problems, aspects, and dilemmas. However, the response phase has a couple of primary aims in the forms of rescuing people from immediate danger and stabilizing the condition of survivors (Wex et al., 2014: 3). According to McLoughlin (1985: p.166), the emergency response includes emergency plan activation, activation of emergency systems, emergency instructions to the public, emergency medical assistance, operating emergency operating centers, reception and care, shelter and evacuation, and search and rescue. This also goes along with what the Red Cross deemed as primary tasks of the response phase - relief, emergency shelter and settlement, emergency health, water and sanitation, and tracing and restoring family links (IFRC, 2012). To link the tasks of long-term emergency response to the emergency response cycle, it would look like this (Cutter, 2003: p.440):

- *Rescue* includes search and rescue
- *Relief* includes emergency medical assistance, manning emergency operating centers, reception, and care, shelter, and evacuation
- *Recovery* includes communities rebuilding in the aftermath of hazard
- *Reconstruction* includes reducing vulnerability and improves preparedness for the next unexpected event
- *Preparedness* includes emergency plan activation, activation of emergency systems, emergency instructions to the public

This thesis does not focus on the long-term emergency response, but only in the short-term. Therefore this thesis only uses the first two phases – rescue and relief - of the emergency response cycle. Since only those two categories give a clear demarcation of the short-term emergency response and leave room for future research into long-term emergency response.

Emergency rescue is crucial in the first 24-48 hours after a hazard has occurred (UNISDR, 2005: p.33). Maximizing the speed and effectiveness of the rescue teams is critical in this phase. The movement of the military troops specialized in search and rescue, and medical teams need to have effective coordination to reach those in the greatest need. The training of volunteers within a community can reduce the pressure on the actors that are needed the most and increase the reach and search capacity in the first few hours after a hazard.

Emergency relief provides essential needs to individuals, families, and communities in the immediate aftermath of an emergency. Rescue workers make sure that there are relief

centers for everyone on the island if they do not evacuate in their own homes. Emergency relief is a short-term emergency response; this phase starts after a natural hazard has occurred. During this phase, people often need medical assistance, setting up operating centers to assess the damage to the infrastructure on the island effectively and to restore food and water supplies for the long term (Cutter, 2003: p.440).

Emergency response challenges

The first few hours following a large-scale disaster, a complex set of organizational demands with unique management problems arise (Drabek, 1985). Drabek's (1985: p.85) study conducted in the USA on large-scale disasters revealed that there are four structural challenges during emergency response: (1) localism, (2) lack of standardization, (3) unit diversity and (4) fragmentation. These four challenges are relevant for both the French and Dutch governments because Saint Martin is an island that is relatively remote and hard to reach. Saint Martin is small, and the state governments often need to assist local units in overcoming deficiencies, like corruption. When state governments send resources, like money, food, medicine, military personnel, police officers, to get the rescue and relief aid off the ground, they need reassurance that the money goes to the rescue and relief projects. The challenges highlighted below, give an insight into what makes emergency response done by state governments in overseas territories challenging.

The first challenge is localism, and this entails that autonomous units (such as schools, hospitals, libraries, or businesses) provide the most resources, goods, and services. Over a duration of time, the degree of centralization of these organizations varies. During the emergency response phase, the first line of responsibility for public protection is with the local government (Drabek, 1985: p.85). Alternatively, in the case of Saint Martin, this is also mostly the state level because the island is small. It is essential to keep the structural quality of localism because they are hit the hardest after a natural hazard and are first in line to start the emergency response.

Second is the lack of standardization; the consequences that come with a high degree of decentralization are often not recognized (Drabek, 1985: p.85). An example is that many states have emergency response plans, but they do not test them annually. States with a lack of standardization tend not to activate the emergency response plans on time, request state disaster assistance, and order a significant evacuation on time (Drabek, 1985: p.85-86). In both parts of Saint Martin, there was an emergency plan. However, the question is of the plan was activated on time and still up to date, was there enough shelter, and was the order to evacuate given on

time. Since Irma could do much damage to the island, the question rises if the emergency response plans were still accurate.

The third challenge is unit diversity. Emergency response calls for demands that require a broad range of elements. It requires help from the local community and combines them with the aid of traditional agencies, such as the Red Cross, the fire department, the police department, law enforcement (Drabek, 1985: p.86). When groups of volunteers start working together with local and state actors, the range of unit diversity expands. After Irma hit Saint Martin, both the French and Dutch governments sent emergency relief to meet the population's basic needs. Moreover, a couple of days after Irma, both governments gave financial aid, but the distribution of financial aid is different. As for the traditional agencies, the Red Cross from France and The Netherlands were almost immediately present after Irma hit Saint Martin.

The fourth, and last challenge, is fragmentation. Fragmentation means that, given the challenge above, fragmentation is expected. Fragmentation is present in local communities and across international (inter)governmental organizations. Nevertheless, because of fragmentation, the emergency response has many potential points of strain (Drabek, 1985: p.86). For example, the emergency response for hurricanes requires a different mix of organizations and resources than the emergency response to a large-scale terrorist attack. Fragmentation also entails recognizing the critical role that state governments can play in assisting local units in overcoming deficiencies.

Ansell, Boin, and Keller (2010) also defined four different challenges in emergency responses. These challenges are also important to set out, since they describe a different set of challenges that are also present in the emergency response from the French and Dutch government in Saint Martin. The first is a challenge in coping with uncertainty. There are three types of uncertainty: (1) uncertainty about the source of the problem, (2) uncertainty about the evolution of the problem, and (3) uncertainty about possible solutions. These three types of uncertainty influence the effectiveness of crisis management (Ansell, Boin & Keller, 2010).

The second challenge is providing surge capacity. When there is a crisis, organizations who respond must work in overdrive and acquire an increase in their resources. Response systems must match the activities and outputs to the appropriate scale of the crisis, sometimes that requires an adequate assessment of the scope of the crisis (Ansell, Boin & Keller, 2010: p.198).

The third challenge is organizing a response. Coordinating effective response might be one of the biggest challenges after a crisis. Many organizations must work together to lighten the threat and the consequences of the crisis by identifying, allocating, transporting, and delivering resources (Ansell, Boin & Keller, 2010). According to Ansell, Boin, and Keller (2010), there are two crucial components of effective crisis response: meet the extraordinary demands that crises impose upon society, and organizations have mobilized people and goods. Mobilization alone is not enough since the coordination aspect of mobilizing people and goods is more important. However, coordination is a challenge in every crisis, and setting up effectively coordinated mobilization is a must (Ansell, Boin & Keller, 2010: p. 198-199). There are two coordination challenges in a transboundary crisis: inter-jurisdictional coordination and inter-sectoral coordination. The first is coordination between two equals. Thus, either two cities in a region or two countries working together. The latter is coordination between institutions representing different functional domains that may not be 'sovereign' in the same sense that territorial jurisdiction is (Ansell, Boin & Keller, 2010). As for mobilization, the main problem is that it is not easy to find the required resources or personnel (since every crisis is different) and deploy them in time. After a crisis, coordination and mobilization efforts will be sequential if not reciprocal, and an organization needs to know what other actors are doing to define its role.

The fourth challenge is communicating with the public (meaning-making). After a crisis, the public expects political leaders to reduce uncertainty and provide a bigger picture. Why a hazard happened, and what needs to be done ('t Hart, 1993). Meaning-making is about framing a crisis. Meaning-making is not only done by politicians, but also by other parties such as the media. The other parties are likely to frame a crisis differently than politicians. Politicians need to be quick to make a statement after a crisis to have control over how to frame the crisis to the public. Making a quick statement is more difficult if a crisis is transboundary, and when many actors are involved. They can provide conflicting or contradicting statements/messages, which can, in turn, make the public more fearful or be in the way of effective coordination between the organizations themselves.

The emergency response challenges show that emergency response is not just a plan that can be made within a couple of days and then expected to run smoothly. A local government should make an emergency response plan for all the (natural) hazards that can occur within their owned territory. The plan should be regularly updated and tested to have a smoother emergency response when a (natural) hazard does occur. If the emergency plan is updated and tested, then many of the challenges above can be minimized. There will still be the uncertainty about many local, national, and international organizations working together and what everybody's goals and ways of working are. However, emergency response plans minimize uncertainty. Not all these challenges are expected to be present in the case of Saint Martin after hurricane Irma. Out of the four challenges presented by Ansell, Boin & Keller, only coordination might be a the most important challenge for the French and Dutch governments. The others might also be present, but coordination might be biggest challenge. Both governments do not reside directly on Saint Martin and have to send military personnel and police officers to find out what is going on. Coordinating the emergency response when the government in charge is not actually on the ground is difficult. It is hard to know what decisions to make when it is impossible to speak to the people affected by the natural hazard directly. The state government can only rely on the people they do get to speak to set up resources needed for the rescue and relief projects.

Out of the four challenges presented by Drabek this thesis expects only unit diversity and fragmentation to be present. Unit diversity means that the traditional agencies help local communities, such as the Red Cross, the fire department, the police department, law enforcement (Drabek, 1985: p.86). When groups of volunteers start working together with local and state actors, this expands the range of unit diversity. After Irma hit Saint Martin, both the French and Dutch governments sent emergency relief to meet the population's basic needs. Both governments gave financial aid, but the distribution of financial aid is expected to be different between both countries. The last challenge is fragmentation. Fragmentation entails recognizing the critical role that state governments can play in assisting local units in overcoming deficiencies. The expectation is that the Dutch government had to assist the local government of Sint Maarten in overcoming deficiencies. The Dutch government set out conditions before Sint Maarten could receive any money from the Dutch government. Before receiving funds, this means that the local government has to change in order to receive rescue and relief aid.

2.2 Effectiveness

Now that emergency response is defined, and what its aims and challenges are, it is essential to define effectiveness to assess the differences in emergency response from the French and Dutch governments. Once defined, effectiveness can give inside into the achievements of emergency response from France and The Netherlands. This thesis uses McConnell's article (2011) on success and failure to evaluate crisis management.

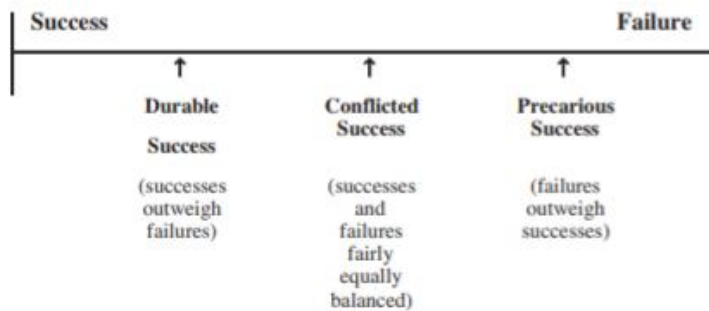
This article states that crisis management can be deemed as a 'success' when it "follows a pre-anticipated and relevant process and involves the taking of decisions which have the effect of minimizing loss of life/damage, restoring order and achieving political goals, while attracting universal or near-universal support and/no or virtually no opposition" (McConnell, 2011: p.68). During crisis management, pre-formulated goals are achieved, and goals that were not set out but can still be a success. Most of the time, the state governments formulate these goals and concludes if they were met or not. The achieved and unachieved goals are usually written down in an official inquiry report. These official inquiry reports are used in this research as well, in order to find out how the rescue and relief aid was carried out and if it was valid or not. The above definition recognizes that public authorities may have goals and meet them, and it also recognizes that not everyone will perceive the government's goal attainment as a success (McConnell, 2011: p.68). Success is also not an unreachable outcome when it comes to crisis management. Success can mean that not all (pre-set) goals are obtained. Crisis management can also be successful when the initial emergency is over, and not all the goals are met, but that the affected region is livable again. When finishing the restoration of the infrastructure, people can return safely to their homes; clean water and food supply and electricity are back on

According to McConnell (2011: p.70) failure, "follows unanticipated and non-relevant processes." Crisis management failures are the opposite of an effective emergency response plan, resulting in an outcome that is utterly different from anticipated. Failure can be a positive thing when these processes lead to a successful and more all-around emergency response. However, actors' decisions can also backfire or turn out to have the opposite effect or if they have negative consequences. Like when a set-out goal is not achieved due to mismanagement, fragmentation, or difficulties in coordination. The above mentioned challenges can significantly affect the effectiveness of the emergency response.

The success and failure spectrum

Crisis management is often not as black and white as success or failure. Many outcomes lie somewhere in between. McConnell (2011: p.71) proposes a typology framework to categorize what lies between success and failure; see figure 1.

Figure 1. The crisis management success/failure spectrum



Source: McConnell (2011: p.71)

The first type is a *durable success*. This outcome is the closest to success. There are shortfalls, delays, and difficulties in long-lasting success, which are 'second-best' (McConnell, 2011: p.72). However, crisis management is durable and can cope with criticism, and still achieve its goals. There is some form of stability, not without problems, the danger is minimized, and broad goals are achieved. To put long-lasting success in one sentence would be: "crisis management was not perfect, but on balance it got more right than it got wrong" (McConnell, 2011: p.72).

The second type is a *conflicted success*, which leaves crisis managers considerably short of what they wanted to achieve. The achieved and unachieved goals are weighed equally. Some crisis responses generate benefits from prolonging the crisis, but at the same time, there are costs. The actors involved in emergency response are often criticized for not following the procedures or for rigidly following the procedures. To sum up, conflicted success in one sentence: "crisis managers got much right, but they also got too much wrong" (McConnell, 2011: p.72).

The third, and last, type from the grey spectrum is a *precarious success*. This type is closer to failure than to success. There are prolonged and controversial crisis initiatives leading to accusations of mishandling and even escalation of crises. There are some achievements, but there are more failures than successes. Eventually, the crisis does end. However, the achievements are overshadowed by the controversy. In short: "despite minor achievements,

handling of the crisis made things worse, far beyond what it should have been" (McConnell, 2011: p.72).

In summary, there are many challenges for state governments in order to have a successful emergency response. All the central concepts are defined, and expected challenges are known. The concepts will be set out more in the methodology chapter. The methodology chapter provides an overview of what the thesis is going to analyze. The methodology chapter has two coding schemes. One about rescue and relief – this is a short-term emergency response.

Moreover, a second coding scheme will give an overview of what effectiveness is, based on the typology framework of McConnell (2011) about success and failure. Success and failure are given values to analyze and conclude if the emergency response from France or The Netherlands was effective.

Chapter 3. Methodology

This chapter sets out the methodology of this thesis. This chapter aims to operationalize the theoretical framework for answering the research question. The chosen research design is a comparative case study between France and The Netherlands. The government actions during the emergency response in Saint Martin are central in the analysis and the actions of some of the governmental institutions like the marine corps and non-governmental institutions such as the Red Cross and the World Bank. The actions of the involved actors can be linked to the emergency response and are "measured" with the help of content analysis. Analyzing the content is done with the help of two coding schemes. The methodology is mainly derived from the previous chapter. The theoretical framework defined the concepts of emergency response and effectiveness. From the literature review on the emergency response, the aims for emergency response this chapter uses to make a coding scheme used in the analysis. Another made coding scheme based on McConnel's spectrum sets out on what is success failure and the grey area in between.

3.1 Research design

The chosen research design is a comparative case study between French and Dutch government, focusing on how effective their emergency response was after hurricane Irma hit Saint Martin in 2017. The reason for choosing a comparative case study is to understand the mechanism of emergency response in detail (Kaarbo & Beasley, 1999: 369). The case selection for a comparative case study is either a 'most similar systems design' or a 'most different systems design' (Anckar, 2008: 389). In this case, France and The Netherlands are similar because they both possess half of one island. Moreover, because of Saint Martin is one island a comparison between the effectiveness of the emergency response from France and The Netherlands can answer as to why a natural hazard, that occurred in a country where the same conditions were present after Hurricane Irma, can have a difference in the effectiveness of an emergency response. One possible explanation for the difference in emergency response could be the difference in political institutions. Both parts of Saint Martin have a different crisis management organization that goes back to them being different legal systems and having different resources available to them.

3.2 Method of data collection

The method of data collection will be a combination of different sources. To set up a framework to research the effectiveness of the short-term emergency response, this thesis uses official inquiry reports, news articles, and academic literature. The four used documents for the gathering of data are official government inquiry reports. The two French reports are a Senat report and a French government report about the situation in Saint-Martin six months after hurricane Irma. The two reports from the Netherlands are reports from the Algemene Rekenkamer and a report from the Tweede Kamer. New articles and inquiry reports are used as background information. Other new articles, which are selected through Factiva, and inquiry reports are used as background information. Once the content analysis is finished, a document will be created to list all the useful paragraphs from the documents. From these paragraphs, selected quotes are used for the analysis chapter.

The quantitative part of the thesis comes from the values in the first coding scheme. Once the useful paragraphs are analyzed, the paragraphs can get values based on the second scheme about success and failure. After that, a table can be made based on these values to show how effective emergency response for each category was for both France and The Netherlands.

Since there are only two cases, the advantage of this research is that it can be more extensive. However, the disadvantage is that generalizability is low. With only two cases, there can be no conclusions drawn as to what effectiveness of emergency response is for a wider audience with more countries – could be made up of countries and organizations. Future research can use the gained knowledge in this thesis. Future research can go into two or more directions. The first direction is doing the same research on the effectiveness of emergency response but add more cases. The second direction is researching the long-term and short-term emergency response, with either the same cases or more cases to see the possible differences between short-term and long-term emergency response from the French and Dutch government.

3.3 Methodology approach

The methodological approach this study adopts is content analysis. Content analysis can give much information about one topic, while not having to leave the desk and go into the field. Desk research is critical in this thesis since I cannot go to Sint Maarten to do my research on the ground. Therefore, I would get the most information needed out of the content analysis.

Content analysis is a research technique for making replicable and valid inferences from data, such as news articles, videos, academic literature, official government reports (Krippendorff, 1980). It describes the content of specific messages, such as newspapers, speeches, press releases, conversations. The content analysis summarizes themes or patterns in messages; it does not report all the details. The content is classified and established in a codebook. The research goal is to reveal the emphasis of a document, to identify the relations between variables in a document, to identify the intention of a document, and to examine patterns in the content of the data. Moreover, objectivity, systematicity, and generality define content analysis (Holsti, 1969).

3.4 Coding schemes

To carry out a content analysis, I will set up two different coding schemes. Two coding schemes are necessary to give a clear framework into how the analysis is structured and set up. The two coding schemes are needed in order to give a schematic overview on which aspects from the emergency response cycle this thesis is focusing on – which will be rescue and relief. The purpose of the second scheme is to rate the effectiveness of each of the categories from the first coding scheme. The first coding scheme will give a schematic view about the short-term emergency response phases – namely rescue and relief. The second coding scheme uses the typology framework of McConnell (2011) about success and failure.

The first coding scheme is about the short-term emergency response from France and The Netherlands in Saint Martin. This coding scheme uses the emergency response cycle from Cutter's (2003) article, see table 1., in which five main categories of emergency response are set out - rescue, relief, recovery, reconstruction, and preparedness. This thesis uses only the first two categories, *rescue* and *relief*, since they are the only two categories that entail short-term emergency response. The two categories each have a definition and keywords to make clear what I research in the documents to gain the content needed for the analysis. The values given in the first coding scheme come from the researcher and not from an article, however the values are based on McConnell's (2011) article on the typology framework about success and failure.

The values in the first coding scheme are based on the second coding scheme, see table 2, where the values are also defined.

Table 1. Coding scheme short-term emergency response

Code	Category	Definition	Indicators/keywords	Value
1	Rescue	Immediate emergency response, as soon as the day after a (natural) hazard struck. Think about search and rescue actions by the first responders. And assessing the damage (Cutter 2003: p.440)	Rescue, armed forces, police officers, gendarmes, emergency rescue, projects, reconstruction, restoration, restart, post-crisis, state service, post-crisis, intervention (of armed forces)	0 = failure 0.25 = precarious success 0.5 = conflicted success 0.75 = durable success 1 = success
2	Relief	The short-term emergency response. Anything from: emergency medical assistance, manning emergency operating centers, assessment of (critical) infrastructure, setting up water and food supplies, restoring communication lines (Cutter 2003: p.440)	Relief, reconstruction, resumed, reopened, re-established, restored, infrastructure, water and electricity supply, restore power supply, projects, recovery, vulnerable	0 = failure 0.25 = precarious success 0.5 = conflicted success 0.75 = durable success 1 = success

The second coding scheme (see table 2.) will be used in the analysis to assess whether the two categories in the first coding scheme (rescue and relief) could be considered a success, a precarious success, a conflicted success, a durable success, or a failure. The second coding scheme will define the values given in the first coding scheme and explain in dept what each value means. The value ranges from 0 to 1. The values that can be given are: 0 = failure, 0.25 = precarious success, 0.5 = conflicted success, 0.75 = durable success or 1 = success. The second scheme gives a definition for each value in order for the researcher to know in what grounds a paragraph in the content analysis can deemed a success or a failure. Based on these values, a conclusion can be made about how effective or ineffective the French and Dutch government’s rescue and relief aid were after Irma hit Satin Martin.

To conclude, the paragraphs in the four official governmental inquiry reports get a value between 0 and 1, based on this second coding scheme. Some of these paragraphs will be set out in the analysis chapter to give a clear vision of what paragraph got what specific value.

Table 2. Coding scheme - Success or Failure

Success	Durable success	Conflicted success	Precarious success	Failure
Adherence to processes relevant to resolve the crisis – almost all the goals in the emergency plan are accomplished	Adhere partly to the processes relevant to resolve the crisis – more than half of the emergency plan goals are accomplished	Adhere half to the processes relevant to resolve the crisis – about half of the goals in the emergency plan is accomplished	Adhere partly to the processes relevant to resolve the crisis – more than half of the goals in the emergency plan are not accomplished	Adhering to processes that are not relevant to resolving the crisis at hand – almost none of the emergency plan goals are accomplished
Utilizing processes which have constitutional or stakeholder support	Utilizing processes which have more than half of the stakeholder support	Utilizing processes which have about half of the stakeholder support	Utilizing processes which have less than half of the stakeholder support	Utilizing processes which do not have constitutional or stakeholder support
Universal or near-universal support for emergency response	More than half universal support for emergency response	About half universal support for emergency response	Less than half universal support for emergency response	Universal or near-universal opposition for emergency response
Making decisions to help contain or eradicate threats	Making a decision that is close to containing or eradicating threats	Deciding that only half contains or eradicates threats	Making a decision that is close to allowing an escalation of threats	Making decisions which do not help contain or eradicate threats, allowing for escalation
Making a decision that helps minimize damage to people, property, and actors involved in the crisis	Making a decision that is close to minimizing damage to people, property, and actors involved in the crisis	Deciding that only half minimize damage to people, property, and actors involved in the crisis	Making a decision that is close to damage people, property and actors involved in the crisis	Deciding that damage to people, property, and actors involved in the crisis
Making decisions with help restore order and stability	Making decisions that are close to help restore order and stability	Making decisions that only half restore order and stability	Making decisions that are close to preventing the restoration of order and stability	Making decisions with prevent restoration of order and stability

Source: McConnell (2011)

3.5 Content analysis

The first part of the analysis is an empirical account of what happened, with information followed from the four official governmental inquiry reports and are based on keywords. For the category rescue the keywords are: *rescue, armed forces, police officers, gendarmes, emergency rescue, projects, reconstruction, restoration, restart, post-crisis, state service, intervention (of armed forces)*. For relief the keywords are: *relief, resumed, reopened, re-established, infrastructure, water, and electricity supply, restore power supply, recovery, vulnerable*. This part is based on the first coding scheme in the methodology.

The second part of the section is a quantitative analysis. The quantitative analysis is mostly based on the second coding scheme (table 2.) in the methodology chapter, with the attachment of the values from the first coding scheme (table 1). The second coding scheme visually displays the definition of effectiveness. Effectiveness is a measure of success or failure; this measure can range from the value 0-1. Where 0 means that paragraph selected containing an action from the French and Dutch government is a *failure*. A governmental action from either France or the Netherlands can correspond with failure. Failure involves making decisions that heighten loss of life/damage, acting as a barrier to the restoration of order and damaging political goals, while attracting universal or near-universal opposition and/no virtually no support (McConnell, 2011: p.70). The second value is that 0.25 is a *precarious success*. Actions that have the value of 0.25 did have minor achievements, but the handling of the crisis made things worse far beyond what it should have been. The value 0.5 is a *conflicted success*. Conflicted success is somewhere between success and failure, where crisis managers got much right, but they also got too much wrong. The value of 0.75 is a *durable success*. Emergency response actions corresponding to this value are not perfect, but on balance, it got more right than it got wrong. The last value given is one and is a *success*. Success is a pre-anticipated process that involves the taking of decisions that minimize loss of life/damage, restoring order, and achieving political goals, while attracting universal or near-universal support and/no or virtually no opposition (McConnell, 2011: p.68). The end of each section concludes the effectiveness of the short-term emergency response, based on the empirical account and the quantitative analysis.

Chapter 4. Analysis

This chapter is about the analysis, and the empirical results. The chapter is divided into two sections. The first section will describe and assess the effectiveness of the short-term emergency response phase 'rescue.' The second section will describe and assess the effectiveness of the emergency response phase 'relief.' Within each section, the first part provides a description of the relief and rescue actions taken by the French and Dutch government - the empirical account. The second part provides the quantitative analysis. In this section each task is given an effectiveness score that is based on the values from the first coding scheme (see figure 1.). The end of each section concludes the effectiveness of the short-term emergency response, based on the empirical account and the quantitative analysis.

Section A. Rescue

The French government

Empirical account of rescue efforts

At around midnight on September 6th, 2017, the eye of hurricane Irma came over Saint Martin. By the time the inhabitants of Saint-Martin woke up, the destruction and damage that Irma caused became visible. Irma was the heaviest hurricane that ever hit Saint Martin, and the damage and destruction were visible. Many houses were inhabitable; cars stood underwater, and streets were impassable due to rubble. Much of the critical infrastructure on Saint Martin had been destroyed or at least severely damaged. Both airports - *Princess Juliana airport* on Sint Maarten and *L'Espérance Airport* on Saint-Martin - were utterly destroyed. The airports stood underwater, almost all of the equipment was severely damaged, and debris was scattered all around the terminal buildings (Wijkhuijs, Van Duin, Jong & Domrose, 2017: p.11). The destroyed runways and the buildings were full of debris, and rescue aircraft could not land in the first few days after Irma (Senat report, 2018). At Princess Juliana airport on Sint Maarten, the runway was closed for big passenger aircraft, the only chartered aircraft to land were military aircraft (Westerink, 2017). At *L'Espérance Airport* on Saint-Martin, no aircraft could land unless they were small private airplanes or helicopters (Senat report, 2018).

The hurricane destroyed much of the critical infrastructure on Saint-Martin - communications masts, airports, ports/harbors, hospitals. However, compared to Sint Maarten, the airport and ports were less damaged and more comfortable to restore (NOS, 2017a). The day after hurricane Irma helicopters and small airplanes could land at *L'Espérance Airport*, not bigger military aircraft. Having no available airport meant that Saint-Martin could not be

stocked with resources from their side of the island. Their rescue missions needed to go through Princess Juliana airport on the Dutch side. After Irma hit, the French and Dutch governments worked together to restore Princess Juliana airport. This airport can house big military aircraft and bring the needed resources to the island, such as water, food, and medicine (NOS, 2017a). Restoring Princess Juliana airport was essential for Saint-Martin because this was the only way to set up an air bridge that could provide food, water, and medicine to their part of the island until L'Espérance Airport is restored (NOS, 2017a).

Hurricane Irma caused less damage to Saint-Martin compared to Sint Maarten, the infrastructure on that island was less destructed, and fewer reparations needed to be carried out (NOS, 2017a). The fewer destructions caused the emergency rescue and humanitarian aid on Saint-Martin to be set up much quicker than in Sint Maarten (NOS, 2017a). The faster emergency rescue is also because Saint-Martin is part of the Republic of France. Saint-Martin is an Overseas Collectivity of France. Saint-Martin still belongs to France, and their public administrators and police agents are directly controlled by the French state (NOS, 2017a).

Another reason for a faster emergency rescue is that the Ministry of Defence deployed new military, while the Dutch government did not. Several days before Irma hit, the French government had pre-positioned near a hundred extra rescue personnel under the authority of the prefect of Saint-Martin (Gouvernement Français, 2018a). From September 4th, 2017, France send 57 military personnel equipped with search dogs, six health personnel, 18 fire brigade personnel, and a water purification unit to Saint-Martin from France (Gouvernement Français 2018a). On September 5th, an activated inter-ministerial crisis cell got to coordinate reinforcements. On September 6th, the Minister for Overseas Territories left Paris with 72 staff members. On September 9th, the French government decreed Saint-Martin in a state of natural disaster. On the 12th, president Macron went to Saint-Martin to visit and report on the situation and lead the rescue efforts (Gouvernement Français, 2018a). In the days following the hurricane, there was a substantial increase in security staff to perform rescue aid. Around 1.200 military personnel was deployed - among them 1.000 soldiers, gendarmes, and police officers in charge to ensure the safety of the inhabitants of Saint-Martin (Gouvernement Français, 2018a). In the first days after Irma, around 300 engineers participated in clearing major traffic routes and ensuring the security of twenty construction sites. In total, nearly 3.000 civil servants and volunteers were mobilized in Saint-Martin in the first few days after Irma, to assist disaster victims - representing around 10% of the local population (Gouvernement Français, 2018a).

The organization of rescue efforts by the French government is called 'ORSEC,' a generic emergency plan (Gouvernement Français, n.d.b). The objective is the efficient and rapid implementation of all necessary resources under the prefect's authority – in this case, Saint-Martin. For Saint-Martin, the ORSEC plan had the objective to assist people with the necessary care and food and restore public networks and services as quickly as possible and secure buildings (Gouvernement Français, 2018a). The specific ORSEC plan for Saint-Martin included risk identification and a planned operational response. The French Ministry of Internal Affairs helped to prepare documents necessary for the rescue operation. The islanders requested the central State to send them food, water and to re-establish communication. Due to solar panels already pre-installed on Saint-Martin, the French government was able to have a backup communication network within the first few hours after Irma hit (Gouvernement Français, 2018a). The backup electricity provided the French government with fast insights into the emergency response on sight.

Quantitative analysis

This part is the quantitative analysis part of the content analysis. Based on the empirical account, earlier in this chapter, tasks on which both governments were scored are set out in order to give a comparison between both governments. The paragraphs in the official government reports are all given a value between 0-1. The following section contains on which tasks both governments were scored and what value the tasks got and why. Not all the analyzed paragraphs associated with a certain task are showcased, since that would make this section too long. The most valuable paragraphs, used as quotes, are showed below. The scores given in this section are average score values, since the scores contain two or more paragraphs. Therefore an average is given for the paragraphs, and this is also the average for the tasks as a whole. In the final comparison of effectiveness of the tasks done by each government, the average values do contain the scores of all the paragraphs.

Analyzing the tasks

The first analyzed task is intervention (of armed forces). The French government had already deployed the French military to Saint-Martin ahead of the arrival of hurricane Irma. This action made sure that Saint-Martin was prepared for rescue operations to be carried out fast and safe. Already stationing police officers and the military ensured that islanders received quick rescue aid. The French government sent military personnel, gendarmes, and police officers to ensure the local inhabitants' safety and fast rescue aid. Along with the military, 3.000 civil servants and volunteers were mobilized in Saint-Martin to give rescue aid to Irma. Rescue aid would not

have happened this fast if the French government had not already sent military personnel in advance of the hurricane. The French government also appointed an inter-ministerial delegate in charge of the post-crisis period, which can help eliminate communication difficulties from the French government to the local government and the inhabitants of Saint-Martin. This person can function as a spokesman for the French government. However, this delegate mostly focusses on the long-term perspective of the post-crisis period after Irma and not on the immediate rescue aid.

This task gets an average score of 0.92, which is closer to 1 (success) than to 0.75 (durable success). This is based on the paragraph scores below: $0.75 + 1.00 + 1.00 = 2.75$. Divided by 3, gives the average score of 0.92. Therefore this task can be deemed a success, meaning that the French government took had a successful intervention (of armed forces) before and immediately after Irma hit Saint-Martin. Below are some quotes to show what the score is based on.

“(…). In the aftermath of this hurricane, the government immediately decided to appoint an inter-ministerial delegate in charge of the post-crisis period with a long-term perspective: the reconstruction of the Northern Islands”.

> This paragraph got the score 0.75, durable success.

“Concerning the gendarmerie, a staff of 200 people was already positioned on site. An additional task force of around 100 militiamen was set up and planned for September 7th in Saint-Martin. On September 16th, many gendarmes arrived. The gendarmerie was able to support security operations in the area and participated in civil security rescue operations, as well as in the protection of strategic infrastructures such as hospitals and airports”.

"Several days before the hurricane hit, the State had pre-positioned near a hundred or so rescue personnel under the authority of the prefect of the zone of Caribbean defense”

> This paragraph got the score 1.00, a success.

"In the days following the hurricane, a system was put in place, with a strong increase in staff numbers and security. At the end of September, some 1,700 military personnel were deployed in the Caribbean, including 1200 at St. Martin's. Among them, 1000 soldiers, gendarmes, and police officers in charge of to ensure the safety of the inhabitants and 300 engineers participating in the clearance major traffic routes and carrying out some twenty construction sites of security. In total, nearly 3,000 civil servants and volunteers were mobilized in the Northern Islands to assist disaster victims, representing nearly 10% of the local population”.

> This paragraph got the score 1.00, a success.

The second analyzed task is restoration. The French government contracted with network operators to ensure rapid restoration of critical infrastructure. The tasks of planning and contracting the means to regenerate the vital infrastructures in Saint-Martin was done well by the French government. However, the transportation of rescue resources went poorly. Since they had to use the airport of Sint Maarten for their provision of food, water, and medicine, their airport on Saint-Martin was not suitable for the landing of big military aircraft. Therefore they had to rely on another airport. The unequipped airport on Saint-Martin could not land big military aircraft. The local government knew beforehand that the airport could not house sizeable military aircraft. The French government could have made some arrangements with the local government of Sint Maarten in the days leading up to Irma, that Princess Juliana Airport could be used for the air bridge to provide for the inhabitants of Saint-Martin. However, the French government did not do this and waited until Irma hit.

This task gets an average score of 0.63, which is closer to 0.75 (durable success) than to 0.5 (conflicted success). This is based on the paragraph scores below: $0.75 + 0.5 = 1.25$. Divided by 2, gives the average score of 0.63. Therefore this task can be deemed as a durable success, meaning that the restoration of the critical infrastructure and setting up an air bridge was relatively effective; but there were some slight issues that could have been avoided – like the air bridge. Below are some quotes to show what the score is based on.

“Planning and contracting the means to regenerate vital infrastructures and restart activity: Define operating plans for transport infrastructure in degraded mode to allow, on the one hand, the safe reception of rescue and reinforcement and, on the other hand, in the immediate post-crisis period, the resumption of a minimum level of activity; contracting with network operators to ensure the rapid restoration of critical infrastructure and encouraging operators of similar networks to enter into partnerships for joint actions; providing for the re-establishment of broadcasting capacity through temporary antennas.”

> This paragraph got the score 0.75, durable success.

“Ports and airports have been strategic supports at the heart of relief efforts(..). In Saint-Martin, a project to expand the airport and its runway is being studied in order to be able to accommodate, if necessary, larger rescue aircraft could not land at Grand Case airport. (...). The main weaknesses noted concerned security, in Saint-Martin at the airport, where fences around the runway were badly damaged in particular. This concern was also important in the aftermath of the crisis when requisitions or State control came to an end: the return to traditional commercial operations was complicated by organisational requirements and

insurance responsibilities that could not be met”.

> This paragraph got the score of 0.5, conflicted success.

The third task is preparedness. The French government was relatively prepared before Irma hit Saint-Martin. There was an ORSEC plan ready for Saint-Martin for after hurricane Irma. This plan was drawn up by both the French government and the prefect Saint-Martin. Having a preparedness plan for when the natural disaster hits make it easier for rescue operations. Every actor involved knows what the plan is and can carry it out to the best of their abilities. The French government had already deployed the French military to Saint-Martin ahead of the arrival of hurricane Irma. This action made sure that Saint-Martin was prepared for rescue operations to be carried out fast and safe. Already stationing police officers and the military ensured that islanders received quick rescue aid.

This task gets an average score of 1.00, which is a success. This is based on the paragraph scores below: $1.00 + 1.00 + 1.00 = 3.00$. Dived by 3, gives the average score of 1.00. Therefore it can be said that the French government was successfully prepared and could effectively roll out rescue operations. Below are some quotes to show what the score is based on.

“Concerning the gendarmerie, a staff of 200 people was already positioned on site. An additional task force of around 100 militiamen was set up and planned for September 7th in Saint-Martin. On September 16th, many gendarmes arrived. The gendarmerie was able to support security operations in the area and participated in civil security rescue operations, as well as in the protection of strategic infrastructures such as hospitals and airports”.

> This paragraph got the score 1.00, a success.

"Several days before the hurricane hit, the State had pre-positioned near a hundred or so rescue personnel under the authority of the prefect of the zone of Caribbean defense. As of September 4th, 2017, the French government send 57 military personnel equipped with and search dogs, six health personnel, 18 fire brigade personnel, and a water purification unit. On September 5th, an activated inter-ministerial crisis cell coordinates the reinforcements. and, on September 6th, the Minister for Overseas France left Paris with 72 staff members. Of the Civil Security. On the 9th, The French government decreed a state of the natural disaster in Saint-Martin. On the 12th, the President of the Republic was on his way to St. Martin and St. Bartholomew's Day to visit report on the situation and lead the rescue effort".

> This paragraph got the score 1.00, a success.

"The organization of the rescue effort is prepared and organized in "ORSEC" plans, which are the responsibility of the State, except in New Caledonia, and are drawn up under the aegis of the prefect. ORSEC plans include information on the risks identified, the planned operational response, and its preparation. Given the complexity of ultramarine situations, increased support from the Ministry of the Interior appears necessary to prepare these documents.

> This paragraph got the score 1.00, a success.

Summary of analysis

As described in the quotes, the French government had already started preparing their rescue aid a couple of days before Irma even hit Saint-Martin. The French government sent 57 military personnel equipped with search dogs, 18 fire brigade personnel, and a water purification unit sent to Saint-Martin from France on September 4th, 2017 (Gouvernement Francais, 2018a). On September 5th, an activated inter-ministerial crisis cell got to coordinate reinforcements. The resources that were necessary to give rescue aid were already stationed on the island before Irma hit. In the days following the hurricane there was a substantial increase in security staff to handle the rescue aid. Around 1.200 military personnel was deployed in Saint-Martin - among them 1.000 soldiers, gendarmes, and police officers in charge to ensure the safety of the inhabitants of Saint-Martin. Along with send resources, there was a plan on the table for what should happen after a hurricane hit Saint-Martin – ORSEC. Having prepared such a document gives more structure to rescue operations.

Table 3. Average of the coded values from French governments on Rescue from the policy documents

	<i>Average value French government</i>
<i>Rescue</i>	0.85

This table shows the summarized values of all the analysed paragraphs – $0.92 + 0.63 + 1.00$. This gives the average value of 0.85 on rescue aid from the French government is pretty high, since the number can only reach a maximum of 1. The average score is between 0.75 and 1, therefore it is in between durable success and success. This means that it can be concluded that the French government had an effective rescue response after hurricane Irma hit Saint-Martin.

The Dutch government

Empirical account of rescue efforts

On Sint Maarten, much of the infrastructure was severely damaged as well and required reparation. The communication masts were down. Therefore the inhabitants and the local government of Sint Maarten could not contact anyone until the emergency communications masts were ready to install. Princess Juliana Airport was severely damaged and destroyed. Many shipwrecks floated around in the destroyed ports, there were flooded hospitals, people's houses were damaged, and the streets were inaccessible due to debris on the road. Because of the visible damage, many islanders set up rescue missions themselves to either look for their own or other people's family members; or clear the streets of debris and repair damage as much as they were able to (Westerink, 2017).

Two days after Irma, two Dutch marine ships - Zr. Ms. Pelikaan and Zr. Ms. Zeeland - arrived (Westerink, 2017; Wijkhuijs, Van Duin, Jong & Domrose, 2017: p. 12). Along with the navy vessels, two aircraft from the Royal Dutch Airforce flew to Sint Maarten, bringing water, food, medicine, and hundreds of soldiers (Algemene Rekenkamer, 2018). The extra soldiers that arrived helped in cleaning up the airport. They made the airport safe again for rescue aircraft to land and repaired the fence by placing a temporary barb-wired fence. The airport needed to be cleared of debris and water since the inhabitants depended on the flown in resources. The aircrafts brought necessities to the island, such as food, water, and medicine (NOS, 2017a; NOS, 2017b).

It was essential that Princess Juliana airport was up and running to house the landing of military rescue aircraft to start emergency aid by the first rescue workers. The brought resources to Sint Maarten from the Netherlands were essential for the emergency rescue, especially clean drinking water. The drinking water plants were still standing after Irma, but the pipes and reservoirs for transporting the water were damaged (Wijkhuijs, Van Duin, Jong & Domrose, 2017: p.12). Before hurricane Irma hit, the local government of Sint Maarten did not set up a food and water stock supply resulting in a greater dependence on emergency aid and islanders looting the stores and supermarkets. The Dutch army patrolling the streets did not do anything about the looting, because they either could not get to the shops since most of the roads were inaccessible due to fallen trees, wrecked cars, and fallen electricity poles. Alternatively, second, because the Dutch army is not responsible for maintaining public order. They can only provide support to local law enforcement (Broere, 2017; Righton & Meijer, 2017; Westerink, 2017). Two days after Irma, a navy helicopter, flew across the island to assess the hurricane's damage.

Since the communication masts were down, those images only reached the Dutch government a day after Irma hit. The humanitarian aid did not get off the ground until five days after Irma. Five days without food, water, electricity, and communication resources are good against the (western) idea that the State is supposed to ensure necessities for its citizens – like a roof over one's head, clean drinking water, and electricity (NOS, 2017b; Westerink, 2017). The United Nations Disaster Assessment and Coordination (UNDAC)-teams only arrived on September 10th, 2017, with humanitarian aid. Three days after Irma hit. The reason for external humanitarian aid to start up this late was that the local government of Sint Maarten had to ask for humanitarian aid themselves - the Dutch government could not do this for them. There was an absence of communication with the outside world after Irma because the communication masts were down, and no emergency transmitter masts were available. The government of Sint Maarten could not contact the United Nations to ask for rescue aid sooner than three days after Irma (NOS, 2017b; Tweede Kamer, 2017). The local government of Sint Maarten expected that the communications masts, necessary would fail once Irma hit land. It was known a couple of days in advance of September 6th that hurricane Irma would be a category five hurricane. However, the local government did not have an emergency transmitter masts ready (NOS, 2017b). Hurricane Irma hit land on a Wednesday, and the emergency transmitter masts sent from The Netherlands shipped by Friday, September 8th, 2017 (NOS, 2017b). Making it that the island had to live without external communication for at least three days until another hurricane (José) passed. The only available communication resources were the satellite telephones from the Dutch armed forces. Without the telephone and internet access, the public administration on the island could not be contacted to set up a plan to inform the islanders about rescue and relief projects.

In Sint Maarten, the emergency rescue and humanitarian aid were set up much slower than in Saint-Martin (NOS, 2017a). The reason being that Sint Maarten is an autonomous country within the kingdom of The Netherlands. At the same time, Saint-Martin is considered as an Overseas Collectivity of France and belongs to France. The Dutch government is only allowed to regulate foreign relations and defense, while the local government of Sint Maarten is responsible for regulating local public management, education, and maintaining the public order (NOS, 2017a). In the case of hurricane Irma, the constitution obliges the Dutch government to help Sint Maarten (NOS, 2017a). Before the Dutch government sends help, the local government of Sint Maarten had to oblige to two conditions due to the lack of trust, efficiency, and integrity in the local government of Sint Maarten.

The first condition was that an 'Integrity Chamber' would be established. The second condition was that the Royal Dutch Border police and the Dutch Customs Authority would strengthen border controls (Algemene Rekenkamer, 2018). The Dutch State Secretary for Interior and Kingdom relations has to oversee that the spending of Trust Fund's money is ethical, healthy, lawful, and efficient (Algemene Rekenkamer, 2018). The Dutch government and the local government of Sint Maarten must approve all the relief and reconstruction projects that receive funding from the Trust Fund of the World Bank (Algemene Rekenkamer, 2018). The reason being is that this should help generate political support for the projects in question. As long as the funds are available, the Dutch government can supply technical assistance to Sint Maarten when the World Bank is unable or unwilling to help. Technical assistance is only granted if based on two conditions. The first is that assistance must be directly related to Hurricane Irma's impact, and second, it must be temporary assistance (Algemene Rekenkamer, 2018). Up until 2018, 29 requests for technical assistance were made, of which 11 have been granted by the Dutch State Secretary (Algemene Rekenkamer, 2018).

The Dutch government allocated around EUR 550 million for the reconstruction and relief of Sint Maarten. Out of this EUR 550, Sint Maarten could freely spend EUR 100 million on its own (Algemene Rekenkamer, 2018). The rest of the EUR 440 million went to the Trust Fund of the World Bank. Money out of the Trust Fund would only be given to Sint Maarten based on the Dutch government's two conditions, to ensure that the money would be well spent and that all decisions on expenditure would be following standards of ethical behavior (Algemene Rekenkamer, 2018).

Quantitative analysis

This part is the quantitative analysis part of the content analysis. Based on the empirical account, earlier in this chapter, tasks on which both governments were scored are set out in order to give a comparison between both governments. The paragraphs in the official government reports are all given a value between 0-1. The following section contains on which tasks both governments were scored and what value the tasks got and why. Not all the analyzed paragraphs associated with a certain task are showcased, since that would make this section too long. The most valuable paragraphs, used as quotes, are showed below. The scores given in this section are average score values, since the scores contain two or more paragraphs. Therefore an average is given for the paragraphs, and this is also the average for the tasks as a whole. In the final comparison of effectiveness of the tasks done by each government, the average values do contain the scores of all the paragraphs.

Analyzing the tasks

The first analysed task is restoration. One of the quotes gives information about what actions the Dutch government did not take during the rescue phase. No restoration to many roofs, access to water and electricity happened in the first days after Irma. Having a roof over one's head, clean drinking water, and electricity was a basic need not provided by the Dutch government to many inhabitants of Sint Maarten after Irma. The Dutch government allocated around EUR 550 million for the reconstruction of Sint Maarten. Before spending any of this money on local projects, the Dutch government and the local government of Sint Maarten must approve of the projects. Both governments approving projects is seen as a successful manner to generate support for the projects and not spending the money on different projects than what they money what intended for. Nevertheless, it turned out to be challenging to get both governments to agree on projects; this can be seen in a low number of projects to were started up with the trust fund money. The Dutch government was not going to give the money for a trust fund without any conditions. Sint Maarten needed to establish an integrity chamber, and the Royal Dutch Border Police and the Dutch Customs Authority needed to be able to help in strengthening border controls. However, Sint Maarten could only receive the money as a World Bank deposit. The money did not directly go to Sint Maarten. Not receiving money for rescue aid went on for about two á three months after Irma. This a long time for all the actors who needed this money to start up rescue and relief aid/projects. Because of the local government of Sint Maarten, who did not consent, the inhabitants had to wait for a long time before being able to spend the money.

This task gets an average score of 0.67, which is closer to 0.75 (durable success) than to 0.5 (conflicted success). This is based on the paragraph scores below: $1.00 + 0.5 + 0.5 = 2.00$. Dived by 3, gives the average score of 0.67. Therefore this task can be deemed as a durable success, were minor achievements have been made with the large amount of money that was set aside, which can be seen in the low number in set up rescue projects. Below are some quotes to show what the score is based on.

“(...) the Dutch government decided to allocate a total of €550 million for the reconstruction of the island. The bulk of this sum, viz. a maximum of €470 million, is to be spent by a Trust Fund managed by the World Bank. In deciding that expenditure should be managed by the World Bank, the State Secretary for the Interior and Kingdom Relations intended to ensure that the funds in question would be spent in an ethically sound, lawful and efficient manner.

Moreover, the management structure has been designed in such a way that both the

Netherlands and Sint Maarten are required to approve all the reconstruction projects that receive funding (...)”.

> This paragraph got the score 1.00, a success.

“(...) The Dutch government set aside a total of €550 million for this purpose. (...), subject to two conditions set by the Dutch government. These were intended to ensure that the money would be properly spent and that all decisions on expenditure would be taken in accordance with high standards of ethical behaviour. The first of these conditions was that an ‘Integrity Chamber’ should be established and the second was that the Royal Dutch Border Police and the Dutch Customs Authority would help to strengthen border controls. The government of Sint Maarten resisted these conditions at the outset, in particular against the idea of an Integrity Chamber.(...), the parliament of Sint Maarten finally gave their formal assent to both conditions in December 2017”

> This paragraph got the score 0.5, a conflicted success.

“(...) A total of 29 such requests have now been made, 11 of which have been granted by the State Secretary. As far as the remaining requests are concerned, a decision will be taken as to whether they could be passed on either to the World Bank or to other organisations. The State Secretary took the view that certain of the requests he turned down were not directly related to the reconstruction work”.

> This paragraph got the score 0.5, a conflicted success.

The second analysed task is preparedness / (intervention (of armed forces)). The Dutch government send rescue resources and emergency relief to Sint Maarten, but only after hurricane Irma already hit. The Dutch government was not prepared beforehand by sending military personnel before Irma hit as the French government did. While the Dutch government was not prepared, the hospital in Sint Maarten was prepared. They had an emergency generator ready for electricity failure. The hospital in Sint Maarten was prepared, maybe not specifically for hurricane Irma, but for a power outage due to an unknown cause. Having an emergency generator ensures that patients who had relatively mild injuries could be treated on the spot and not cause any disruption for the patients who required more intensive care.

This task gets an average score of 0.75, which is a durable success. This is based on the paragraph scores below: $0.75 + 0.75 = 1.50$. Dived by 2, gives the average score of 0.75. Therefore this task can be deemed as a durable success, meaning that the emergency response actions were not perfect but they got more right than they got wrong. Below are some quotes to show what the score is based on.

“In September 2017, a number of Caribbean islands (...), were hit by two devastating hurricanes within the space of two weeks. Hurricane Irma and Hurricane Maria not only caused a great deal of human suffering, they also wrecked a huge amount material damage to the islands’ infrastructure, homes and businesses. The Dutch government responded immediately, sending emergency relief to the three islands and helping the local authorities maintain public order and repair the infrastructure”

> This paragraph got the score 0.75, durable success.

“Hurricane Irma left the hospital facing a combination of flooding and leaks, but it managed to become operational again more or less straight afterwards. The hospital’s emergency generator restored supplies of water and electricity, allowing a large number of patients to be treated on the spot. Patients requiring more intensive or special care had to be evacuated”

> This paragraph got the score 0.75, durable success.

Summary of the analysis

The biggest obstacle for an effective emergency rescue was not being prepared, which lead to communication problems. Another direct obstacle is the autonomy status of Sint Maarten, which led to problems in setting up an effective restoration projects. Sint Maarten had little help from the Dutch government in organizing help from external organizations. Sint Maarten is an autonomous country within the Kingdom of The Netherlands and had to contact organizations themselves if they wanted rescue aid. In order for the local government of Sint Maarten to contact organizations, they needed communication masts. However, there was no restoration of communication on the island until four days after Irma. The Dutch government and the local government did foresee that the communication masts were going to go down during hurricane Irma. The local government of Sint Maarten did not prepare and did not order backup communication masts. When they did order the masts, the masts had to be shipped from the Netherlands. The French government did plan ahead and had pre-installed emergency solar panels ready to be used, which meant that they could restore communication lines immediately after Irma hit.

Table 4. Average of the coded values from Dutch governments on Rescue from the policy documents

	<i>Average value Dutch government</i>
<i>Rescue</i>	0.71

This table shows the summarized values of all the analysed paragraphs – 0.67 + 0.75. This gives the average value of 0.71 on rescue aid from the Dutch government. The number is between 0.75 and 0.5, but closer to 0.75. Therefore the rescue aid from the Dutch government is a durable success. This means the Dutch government had an durable effectiveness in their rescue response after hurricane Irma hit Sint Maarten. Meaning that on average the Dutch government did set up a durable effective rescue operation after Irma hit, but there is room for improvement; especially in preparedness.

Section B. Relief

French government

Empirical count of relief aid

Effective emergency response requires the provision of shelter for Saint-Martin populations and sufficient relief facilities to assist disaster victims (Senat, 2018). This means having planned an organization that allows for the mobilization or reinforcement under various scenarios. The French government planned and organized specific organizations, such as the French navy, to ensure that relief actions and access to vital resources are taken care of before a natural hazard hits Saint-Martin (Senat, 2018). The government pre-positioned the navy and other armed forces to make sure inhabitants could get relief aid and minimum access to vital resources. The military could also provide life-saving equipment, like drinking water supplies, electricity, and communication networks. All those things are necessary in order to set up effective relief and rescue aid. The government also provided a relief fund, FSOM, with consistent resources for when they needed to go on a support mission, and they also established regional partnerships for joint interventions and assistance was there to be a natural hazard in Saint-Martin (Senat, 2018). The French Red Cross had already created an awareness-raising module - a *citizen preparedness plan* - for the islanders to limit the consequences of a disaster (Senat, 2018). Saint-Martin is divided into different zones, and in each of the zones got adapted *citizen preparedness plans* local wants and needs.

The ports and the airport of Saint-Martin were important for relief projects to start up after Irma hit. Therefore they had to be operational and clean of rubble, debris, and dirt. Some relief projects with regards to the supply of resources got delayed due to another hurricane approaching. Since this hurricane went right by Saint-Martin and caused no damage, the relief projects that were underway could quickly start back up again. The relief projects were mostly set up by civil protection organizations, such as the Red Cross, and worked alongside state relief actors (Senat, 2018). The air bridges to Saint-Martin could restart in September. In the first four weeks after Irma, many buildings were de-watered. Many shops could open up in October and electricity, and mobile phone networks were established five weeks after Irma. All of these projects show that many actors are working hard on the relief aid in Saint-Martin, but some essential things like the air and sea bridge that was supposed bring food, medicine, and water was not set up right away. This made it that the airport of Sint Maarten had to function as the air bridge for Saint-Martin and Sint Maarten.

The French Ministry of Internal Affairs committed EUR 12,2 million for crisis relief on Saint-Martin in 2017 and EUR 50 million in 2018 (Gouvernement Français, 2018a). The Ministry of the Overseas created an ad hoc fund named ‘the Overseas France Relief Fund’ to finance all the relief projects carried out by the French government in Saint-Martin (Senat, 2018; Gouvernement Français, 2018a). The governmental relief projects consisted of the deployment of military reinforcement and air and seas bridges, food, and relief supplies. Together with an extra EUR 140 million for individuals, companies, and communities (prepaid cards and the short-term employment of people) (Gouvernement Français, 2018a). The European Union also set up a solidarity fund containing EUR 46 million to deploy relief supplies. This EU fund intended for member states affected by a natural hazard, was accessible from Saint-Martin. In Saint-Martin, around 1.200 individuals and around a hundred companies affected by Irma got money from the EU solidarity fund (Gouvernement Français, 2018a). The relief projects set up by the government consisted of helping the islanders who fell victim to Irma and had no resources left. The French government provided free tarpaulins, free pre-fabricated houses, rations of food, bottles of clean drinking water, and water fountains so the people in Saint-Martin could still get their basic needs. Relief resources got delivered in the weeks following the passage of Irma. Not only free resources were handed out to the people affected by Irma, but the affected people also got money from several organizations such as CAF and CGSS that could function as an allowance during the first weeks after Irma (Gouvernement Français, 2018a). These organizations gave EUR 250 per adult and EUR 50 per child to households who live below the poverty line and have a disabled family member.

The French government handed out prepaid cards to affected islanders, containing EUR 300 for an adult and EUR 100 for a child – up to EUR 900 per family (Gouvernement Francais, 2018a). The money on these cards could be spent in shops on Saint-Martin only since it was also a way for the French government to revitalize the local economy. A total of around 4.200 households were given relief resources from the government.

Quantitative analysis

This part is the quantitative analysis part of the content analysis. Based on the empirical account, earlier in this chapter, tasks on which both governments were scored are set out in order to give a comparison between both governments. The paragraphs in the official government reports are all given a value between 0-1. The following section contains on which tasks both governments were scored and what value the tasks got and why. Not all the analyzed paragraphs associated with a certain task are showcased, since that would make this section too long. The most valuable paragraphs, used as quotes, are showed below. The scores given in this section are average score values, since the scores contain two or more paragraphs. Therefore an average is given for the paragraphs, and this is also the average for the tasks as a whole. In the final comparison of effectiveness of the tasks done by each government, the average values do contain the scores of all the paragraphs.

Analyzing the tasks

The first analyzed task is recovery. The French government set aside money for sending military reinforcements, air and seas bridges, food and relief supplies. Another sum of money was also set aside for the short term rescue and relief aid, such as prepaid cards for spenditure in the local shops and short-time working. The French government was prepared for relief operations because they had pre-installed plans. The pre-positioned the navy and other armed forces had to make sure inhabitants could get relief aid and minimum access to vital resources. The military could also provide life-saving equipment, like drinking water supplies, electricity, and communication networks. All those things are necessary in order to set up effective relief and rescue aid. The French government delayed the production of relief supplies due to three other hurricanes approaching Saint-Martin after Irma. This was an unprecedented situation, but the production stop of relief supplies for a couple of days could be disastrous for Saint-Martin, who is trying to clean up and rebuild again. Due to the circumstances, there was no other choice the French government could have made for their personnel who resided on the island to be safe. Relief aid is necessary since 95% of the buildings in Saint-Martin has been affected. A

stop in the production of relief resources stagnates the rebuilding process in Saint-Martin.

This task gets an average score of 0.5, which is a conflicted success. This is based on the paragraph scores below: $0.5 + 0.75 + 0.25 = 1,5$. Dived by 3, gives the average score of 0.5. Therefore this task can be deemed as a conflicted success, were minor achievements have been made and the handling of the task made things worse beyond what it could have been. Below are some quotes to show what the score is based on.

“Since the passage of Irma, the State and its operators have already spent or committed more than 300M€ for Saint-Martin and Saint-Barthélemy: 163M€ for the contingency plan (deployment of military reinforcements and air and sea bridges, food and relief supplies, etc.) and at the minimum 140M€ for the financial support of individuals, companies and communities (short-time working, prepaid cards, etc.)”.

> This paragraph got the score 0.5, a conflicted success.

“plan and contract an organisation to ensure relief and minimum access to vital resources : in each zone, ensure that the intervention capabilities of the armed forces, in particular the French Navy, are maintained and pre-position emergency resources permanently or during periods of seasonal risk, while providing for projectable reinforcements calibrated according to the scale of the crisis; provide for schemes for access to life-saving equipment (drinking water supplies, electricity and communications network) and emergency evacuation and accommodation schemes.”

> This paragraph got the score 0.75, a durable success.

“The emergence in the following days of the threat of two more Force 5 hurricanes, José and then Maria, whose paths finally avoided these already ravaged islands, delayed the projection of relief supplies because the high-frequency sequence of three major hurricanes was also unprecedented. (...) some 20,000 buildings were pulverized and 95% of the buildings affected on Saint-Martin - nevertheless gave rise to an exceptional logistical and human deployment, with more than 3,000 civil servants and volunteers at the height of the crisis and a large-scale air and sea bridge to provide food and equipment to the 45,000 disaster-stricken inhabitants of the Northern Islands”.

> This paragraph got the score 0.25, precarious success.

The second analyzed task is relief projects. Much effort has gone into relief projects in the first few weeks after Irma. In the first weeks after Irma, many buildings have been de-watered, many shops could open up in October, and electricity and mobile phone networks were established five weeks after Irma. All of these projects show that many actors are working hard on the relief aid in Saint-Martin, but some essential things like the air and sea bridge that was supposed bring food, medicine, and water was not set up properly right away. Making it that the airport of Sint Maarten had to function as the air bridge for Saint-Martin as well as for Sint Maarten. The French government immediately set aside millions of euros for a relief fund for Saint-Martin. Unlike the fund created for Sint Maarten, this money could be spent on relief projects on the island without consulting the French government. This relief fund was temporary but long enough for Saint-Martin to set up relief projects. Like handing out free pre-fabricated houses, rations of food, clean drinking water, and water fountains, and a prepaid money card, almost everybody on the islands to spend in the local shops.

This task gets an average score of 0.75, which is a durable success. This is based on the paragraph scores below: $0.75 + 0.75 = 1.50$. Dived by 2, gives the average score of 0.75. Therefore it can be stated the French government set up effective relief projects in the first few weeks after Irma. Below are some quotes to show what the score is based on.

“With the help of private operators and associations active on the spot, these objectives were achieved in two months:

- *air and commercial connections resumed in mid-September...*
- *the electricity and mobile phone networks have been re-established in 5 weeks*
 - *(..) 85 % in Saint-Martin reopened on 6 November*
- *10,000 buildings have been de-watered, thanks in particular to the action of the Civil Security and Military Service youth Adapted (ADM)*
- *many shops and restaurants have reopened from October”.*

> This paragraph got the score 0.75, durable success.

“During major overseas crises, the government can naturally activate appropriations set aside for exceptional events, or budgetary appropriations that it would like to reallocate. The Ministry of the Interior committed 53 million for the crisis on Saint-Martin and Sint Bartholomew. The Ministry of Overseas France also has an ad hoc fund: the Overseas France Relief Fund”.

> This paragraph got the score 0.75, a durable success.

Summary of analysis

In Saint-Martin, the relief projects set up by the French government consisted of helping the islanders who fell victim to Irma and had no resources left. The government provided free tarpaulins, free pre-fabricated houses, rations of food, bottles of clean drinking water, and water fountains; so the people in Saint-Martin could still get their basic needs. The sent resources got delivered in the weeks following the passage of Irma. Not only free resources were handed out to the people affected by Irma, but family members also got money from several organizations such as CAF and CGSS functioning as an allowance. The pre-positioned the navy and other armed forces to make sure inhabitants could get relief aid and minimum access to vital resources. The military could also provide life-saving equipment, like drinking water supplies, electricity, and communication networks. All those things are necessary in order to set up effective relief and rescue aid. The provision of relief aid products was set up well, and many islanders could profit from this.

Table 5. Average of the coded values from French governments on Relief from the policy documents

	<i>Average value French /government</i>
<i>Relief</i>	0.63

This table shows the summarized values of all the analysed paragraph – 0.5 + 0.75. Gives the average value of 0.63 on relief aid from the French government. The number is between 0.5 and 0.75, therefore it is in between a conflicted success and a durable success. This means the French government was durably effective in their relief response after hurricane Irma hit Sint Maarten. The French government got the tasks of setting up effective relief projects and handing out resources and money right, but it there is also room for improvement – like setting up an effective air bridge for the resources to get to the island and expanding the longevity of the relief aid.

Dutch government

Empirical account of relief aid

Right after hurricane Irma hit Sint Maarten in September 2017, the Dutch government responded by sending emergency relief to three of their Caribbean islands. Most resources were sent to Sint Maarten because this island got hit the worst (Tweede Kamer, 2018). The resources were to help the local authorities maintain public order, repair damaged infrastructure, and provide basic needs like housing, food, and drinking water (Algemene Rekenkamer, 2018). Besides the resources, the Dutch government set aside EUR 55 million for both Sint Maarten, Saba, and Sint Eustatius to use for emergency relief (Algemene Rekenkamer, 2018). The Ministry of Infrastructure and Water Management (Ministry of I&W) is responsible for the relief aid from the Dutch government. The main focus was the fast recovery of the primary infrastructural facilities like the ports, airports, the supply of clean drinking water, and waste disposal (Wijkhuijs, Van Duin, Jong & Domrose, 2017: p.10). Repairing the critical infrastructure for as fast as possible emergency aid provides the basis for long term recovery. For information about Sint Maarten, the Ministry of I&W relied on the information given to them by the Dutch and local news outlets (Wijkhuijs, Van Duin, Jong & Domrose, 2017: p.9).

On Sint Maarten, many relief projects got off the ground, intending to reconstruct the island in a later stadium. According to the Algemene Rekenkamer (2018: p.9), a large number of people on Sint Maarten are still in need of help. Only a small number of relief projects got off the ground after Irma. Projects that were immediately active after Irma were - aid for victims from Cordaid, damage assessment from the Dutch government, disaster response from the Mission Aviation Fellowship, pre- and post-event aerial damage assessment, close-ups of population centers and settlements, and a request from foreign minister Koenders to the UN for support of reconstruction (Reliefweb, 2017). A small number of relief projects got off the ground in Sint Maarten, while many people require relief (Algemene Rekenkamer, 2018). The Dutch government set aside money in a trust fund managed by the World Bank, but this money was only available from December 2017. Before a project can get off the ground, the Dutch government and local government of Sint Maarten need to approve, and this can also take a long time. Therefore, in reality, not many relief projects got started up before January 2018 – this is when the relief aid period officially ended. The local government of Sint Maarten did not have enough expertise to set up effective relief aid and needed the Dutch government and the World Bank to help them. The local government needed money and knowledge on how to spend the money in the Trust Fund. If the World Bank does not have the expertise to set up a project,

personnel from the Dutch government must oversee the establishment of the project.

Many islanders spend weeks following hurricane Irma, in some cases, even months, without electricity (Algemene Rekenkamer, 2018). The local water and utility company (GEBE) was able to restore power supplies to specific areas on the island within 48 hours of Irma hitting land. However, some parts had to wait weeks or months for regaining power. Irma destroyed many pipelines and reservoirs for water storage and delivery. The destroyed pipelines disrupted the supply of clean drinking water to the inhabitants of Sint Maarten. The Dutch government provided them with clean drinking water, by sending naval vessels of the Dutch military to bring clean bottles of drinking water and a little osmosis installation – this is an emergency drinking water supply installation. A day later, the Dutch government also decides to send three more osmosis units to Sint Maarten, together with taps. The osmosis units were supposed to go to Sint Maarten by a military aircraft. However, the aircraft was refitted for military troop transport and left the osmosis units in the Netherlands. The Zr. Ms. Karel Doorman navy vessel delivered the osmosis units on September 22nd. It took a week to set up the osmosis units, and from October 1st the units are usable for the islanders.

Most of the attention of the rescue workers and military personnel went to the restoration of the airport. However, the port in Sint Maarten was severely damaged as well. The jetties were unusable, and there were sunken boats in the fairway, making it difficult to assess if large ships with relief supplies could gain access to the jetties (Wijkhuijs, Van Duin, Jong & Domrose, 2017: p.12). The port needed a quick reparation. It functions as a transit port for the surrounding Dutch islands. It is also essential for the delivery of buildings materials needed for relief projects (Wijkhuijs, Van Duin, Jong & Domrose, 2017: p.12). The restoration of the port was done by a wreck salvage team that happened to be in the Caribbean by accident; they could already restoring the port by September 14th. Their work consisted of taking sunken ships and containers out of the fairway and carry out repairs to the quay (Wijkhuijs, Van Duin, Jong & Domrose, 2017: p.12). The wreck salvage team had to stop working about five days into the process because another hurricane was approaching Sint Maarten. After September 19th they could continue working, but the hurricane caused new containers to fall in the port, which needed salvaging. On September 22nd a second Dutch military navy vessel arrived in Sint Maarten, the Zr. Ms. Karel Doorman that needed to dock in the port. The port got cleared from containers and shipwrecks by the time the navy vessel arrived (Wijkhuijs, Van Duin, Jong & Domrose, 2017: p.12).

The hardest part about relief aid for the Dutch government was the absence of communication in the first couple of days after Irma. It took days to figure out how much damage Irma had done and figure out the needs of the relief resources. Sint Maarten is far from the Netherlands; it took a couple of days for navy vessels and another military to get to Sint Maarten. Another feature that made relief aid difficult is the time difference. Whenever the workday would end in the Netherlands, a new day began in Sint Maarten—making communication, whenever possible, difficult between the government and military troops on the ground. By January 2018, the emergency phase was stopped - by that time; the re-clean drinking water got reestablished for most homes.

Quantitative analysis

This part is the quantitative analysis part of the content analysis. Based on the empirical account, earlier in this chapter, tasks on which both governments were scored are set out in order to give a comparison between both governments. The paragraphs in the official government reports are all given a value between 0-1. The following section contains on which tasks both governments were scored and what value the tasks got and why. Not all the analyzed paragraphs associated with a certain task are showcased, since that would make this section too long. The most valuable paragraphs, used as quotes, are showed below. The scores given in this section are average score values, since the scores contain two or more paragraphs. Therefore an average is given for the paragraphs, and this is also the average for the tasks as a whole. In the final comparison of effectiveness of the tasks done by each government, the average values do contain the scores of all the paragraphs.

Analyzing the tasks

The first analyzed task is recovery. Many inhabitants of Sint Maarten were without electricity for two days or longer. For the households that electricity again after two days this was a relatively short period without electricity. However, for households without electricity for more than two days, this is a very long time. Water, electricity, and a roof over one's head are basic life necessities that the state must adhere to. In some cases, the government failed to give people their basic needs, and in some cases, they did okay. Around 500 houses of inhabitants who are unable to repair their homes themselves. Around 122 houses got repaired up until October 2018, with money from the Trust Fund. While the Dutch government estimates that around 500 houses need repairing, in reality, this number is probably much higher. This means that not all the people who need help get help, because they belong to a vulnerable group

who cannot speak up for themselves. The Dutch government and the local government of Sint Maarten need to locate his people and make sure everybody who needs relief aid gets that aid. Local NGO's and international organizations like the UN helped repair the roofs with around EUR 3 million from the Dutch trust fund. The Dutch government nor the local government of Sint Maarten had the means to repair roofs and NGO's and international organizations needed to help the most vulnerable people repair the roofs of their house. While international organizations and NGOs are needed in a time of crisis, citizens must also be able to rely on the local government to help when one is unable to fix something, like a house. Moreover, the Dutch government fell short in this regard

This task gets an average score of 0.58, which is a conflicted success. This is based on the paragraph scores below: $0.5 + 0.75 + 0.5 = 1.75$. Dived by 3, gives the average score of 0.58. Therefore this task can be deemed as a conflicted success, were minor achievements have been made and the handling of the task made things worse beyond what it could have been. Below are quotes to show what the score is based on.

"Following Hurricane Irma, many residents of Sint Maarten were forced to spend weeks – and in some cases even months – without electricity. GEBE is the local water and utilities company that is responsible for both electricity and water supplies. GEBE was able to restore power supplies to certain parts of the island within 48 hours of the hurricane. However, water storage tanks were also damaged and GEBE's headquarters were destroyed".

> This paragraph got the score 0.5, a conflicted success.

"Based on estimates, the Ministry of Housing, Spatial Planning, the Environment and Infrastructure (VROMI) expects the roof repair programme to be able to handle a maximum of 350 roofs. Following the completion of the early relief stage, the government of Sint Maarten estimated that around 500 houses inhabited by people who were unable to carry out the repairs themselves, still needed to be repaired. According to some of the people we spoke to, the actual number is much higher as not everyone who is in need has registered(...). The problem is that households have to self-register for help. It is unclear how many vulnerable households are in need of help but unable to register for assistance (...). Priority is given to the elderly, single parents and other households with children. The Ministry of VROMI also performs a loss assessment, in order to decide which houses are technically fit to be repaired in such a way as to make them hurricane-proof. (...)".

> This paragraph got the score 0.75, a durable success.

"A number of housing repair programmes operated by international organisations and local NGOs were funded during the early relief stage (...), the State Secretary for the Interior and Kingdom Relations told the Dutch House of Representatives that the current situation was that 122 houses had been repaired and that work was being carried out on a further 93 houses. This was a smaller number than originally projected, partly because the UNDP has not been able to repair as many roofs as had been planned and had also run into delays. There were various reasons for this, one of which was that shortages on the supply side of the market in the wake of the hurricane had pushed up prices of labour and materials in the Caribbean".

> This paragraph got the score 0.5, a conflicted success.

The second analyzed task is relief projects. Only a small number of relief projects got off the ground in Sint Maarten, while many people require relief. The Dutch government set aside money in a trust fund managed by the World Bank, but this money was only available from December 2017 onwards. However, before a project can get off the ground, the Dutch government and local government of Sint Maarten need to approve, and this can also take a long time. Therefore, in reality, not many relief projects got started up before January 2018 – this is when the relief aid period officially ended. The local government of Sint Maarten did not have enough expertise to set up effective relief aid and needed help from the Dutch government and the World Bank. The local government needed money and knowledge on how to spend it. If the World Bank does not have the expertise to set up a project, personnel from the Dutch government needs to oversee the establishment of the project. Sending extra personnel from the Netherlands to Sint Maarten costs the Dutch government much money and interest in the money that the World Bank is being monitored. Given money, it only ends up costing the Dutch government more money.

This task gets an average score of 0.5, which is closer to 0.5 (conflicted success) than to 0.25 (precarious success). This is based on the paragraph scores below: $0.25 + 0.5 + 0.75 = 1.5$. Divided by 3, gives the average score of 0.5. Therefore this task can be deemed as a conflicted success, where minor achievements have been made and the handling of the task made things worse beyond what it could have been. Below are quotes to show what the score is based on.

"Complaints have been voiced from various quarters about the progress of the reconstruction work. For example, the Dutch National Ombudsman concluded, in tandem with his colleague on Sint Maarten, that "a large number of people on Sint Maarten are still in urgent need of concrete help". They claimed that only a small number of relief projects had actually got off

the ground".

> This paragraph got the score 0.25, a precarious success.

"The main obstacle standing in the way of a rapid relief is the lack of manpower and expertise on Sint Maarten. If the relief programme is to make faster progress, Sint Maarten will not only need financial support, but also assistance in spending the money. We found that officials on Sint Maarten needed assistance from the Netherlands and/or the World Bank".

> This paragraph got the score 0.5, a conflicted success.

"The agreement with the World Bank includes a clause for technical assistance to be provided to Sint Maarten. Such assistance would be paid from the Trust Fund. The World Bank mainly provides assistance with specific projects, for example with the preparation of the National Recovery and Resilience Plan (NRRP) and with the establishment of the NRPB".

> This paragraph got the score 0.75, a durable success.

Summary of analysis

The Dutch government helped relief aid by sending resources to local authorities to maintain public order and repair the damaged infrastructure. Other resources were spent on basic needs like housing, food, and drinking water (Algemene Rekenkamer, 2018). Besides the deployment of the armed forces and police officers, the Dutch government set aside EUR 55 million for both Sint Maarten, Saba, and Sint Eustatius to use for emergency relief.

Table 6. Average of the coded values from Dutch governments on Relief from the policy documents

	<i>Average value Dutch government</i>
<i>Relief</i>	0.54

This table shows the summarized values of all the analysed paragraphs – $0.58 + 0.5$. Gives the average value of 0.54 on rescue aid from the Dutch government. The number is between 0.5 and 0.75, therefore it is in between durable success and a conflicted success; but closer to a conflicted success. This means the Dutch government had a conflicted effectiveness in their relief response after hurricane Irma hit Sint Maarten.

Discussion of the results

Now that both the effectiveness averages of ‘rescue’ and ‘relief’ are known, an average is calculated from both the values. If these average values can say something about the short-term effectiveness emergency response as a whole - from each separate government and from both governments combined.

Table 7. Average effectiveness values for rescue and relief for French and Dutch government

	<i>Rescue</i>	<i>Relief</i>	<i>Total average both governments</i>
<i>French government</i>	0.85	0.63	0,74
<i>Dutch government</i>	0.71	0.54	0.63
<i>Total average</i>	0.78	0.59	0.69

*All the average values can reach a maximum of 1.0

The total average score for the code rescue is 0.78. This entails that the effectiveness of the rescue aid as a whole, was a 0.78 out of 1. The effectiveness of the rescue aid was about 78% of the time successful. The total average score for the code relief is 0.59. This means that the relief aid as a whole, was a 0.59 out of 1. The effectiveness of the relief aid was about 59% of the time successful. The total average score for the French government for both the effectiveness of rescue and relief is 0.74 out of 1, for the Dutch government this is 0.63 out of 1. Meaning that the French government had an effective/successful emergency response of about 74%, when compared to the whole short-term emergency response. In the case of the Dutch government they were 63% effective/successful in their short-term emergency response as a whole. For both of the governments combined, the average effectiveness value of the short-term emergency response is about 69%. Resulting that in about two thirds of the time, the short-term emergency response from both government was successful/effective. Out of a 100% this is more than half, but not an ideal number. When these numbers are carried over to real world scenarios, this means that every 1 in 3 people/infrastructure sites received effective/successful short-term emergency response on either part of Saint Martin. On a population of 74.884 inhabitants (35.925 in Saint-Martin and 38.959 in Sint Maarten), only about 50.921 people received effective emergency response (CBS, 2010). In a situation where about 90% of the whole infrastructure is badly damaged, the 90% that is affected need effective help. In this case in about 22% of the cases, no adequate and effective emergency response could be given. It is also ideal to think that 100% of the cases can be given effective emergency response, but somewhere between 85-90% would be ideal.

At the beginning of this thesis two expectations were set out:

- The French government had a less effective emergency response after hurricane Irma.
- The Dutch government had a more effective emergency response after hurricane Irma

These expectations turned out to be different after the analysis. The analysis showed that the French government had a more effective emergency response when compared to the Dutch government. The reason why these expectations turned out to be different, is because of the prior ideas that I had about the situation on Saint Martin that was shaped by articles I read. In the media it is often said that Sint Maarten was relatively 'quick back on its feet' after Irma hit, while the French side Saint-Martin had a rougher time getting back to their way of living after Irma. There has been some riots in Saint-Martin in December of 2019. The focus of the riot's was the lack of a solution for the polluted drinking water and the risk assessment plan with which the French government uses it to determine the red zones. The red zones are the areas in Saint-Martin with high flood risk. This shows that long-term emergency response focussed on recovery and reconstruction is still lacking in certain places. The expectation for this thesis might be true for long-term emergency response. However, for the short-term emergency response my expectations turned out to be different.

Chapter 5. Conclusion and discussion

This thesis aimed to answer the different outcomes in effectiveness of the short-term emergency response from the French and Dutch governments in Saint Martin after hurricane Irma. Based on the descriptive and quantitative analysis of the emergency response phases – rescue and relief, a conclusion can be made that the French government had a more effective short-term emergency response; when compared to the Dutch government. This was an unexpected result, because of the expectation that the Dutch government had a more effective short-term emergency response was false. The result also indicates that there was a more significant difference in the average value for the category 'rescue aid.' Meaning that the French government did set up a significantly more effective rescue aid than the Dutch government. While for the category 'relief aid,' there was no real significant difference between the two governments. The methodology used on this thesis can be part of why there was such a different conclusion, compared to the set expectations. The methodology only researched the short-term emergency response, while the expectations were made with the long-term emergency response in mind. Saint Martin is still not back to the way it was before Irma, and that is often what the media still talks about. Nowadays she rarely talk about what the French and Dutch government did to help the island immediately after Irma. This is why the researcher had the idea in mind that the Dutch government had a more effective emergency response. This can be true for the long-term emergency response, but not for the short-term emergency response.

The reasons for the difference in the effectiveness of 'rescue aid' can be based on two tasks. The first is the preparedness of the government. The French government was better prepared in their rescue aid and, therefore, ended up having a more effective emergency response. The first responders - made up of the military, police officers and gendarmes - arrived on Saint-Martin a couple of days before Irma hit. The actors who were already on the ground were trained military, police officers, or gendarmes and could lead in an effective rescue operation. The French government was prepared because they already had an ORSEC plan ready for an after hurricane-scenario. Having an emergency plan ready that can be rolled out immediately after a disaster, strikes can save lives and potential fragmentation in coordination. If all the involved actors in the rescue aid know what they have to do and what their tasks are. Prevention of miscommunication and misinformation amongst the rescuers can happen. No fragmentation in coordinating relief aid will result in a smoother and faster rescue aid operation.

In Sint Maarten, the rescue aid could have been set up more effectively, had the Dutch government, and the local government of Sint Maarten prepared more effectively. The biggest obstacle was that Sint Maarten had no communication with the outside world for the first four days. This was partly due to the breakdown of the communication network, which further exacerbated the situation and left the island without contact and rescue for an extended period (Tweede Kamer, 2018). The Dutch government already knew that the communications masts were not going to make it through hurricane Irma. Both no emergency communication masts were to Sint Maarten in the days before Irma. Had communication lines been set up faster a call could have been made for rescue aid from international organizations to come sooner.

The second reason for the difference is the recovery process after Irma in both parts of Saint Martin. The difference in recovery has a lot to do with Saint Martin's relationship with France and the Netherlands. Saint-Martin is an Overseas Collectivity and, therefore, a part of the Republic of France. This means that the emergency response and crisis management are the state's responsibility and not of Saint-Martin. Many legal, governmental, education decisions are not made autonomously in Saint-Martin. The French president, currently Emmanuel Macron, is the chief of State of Saint-Martin and is represented by a local prefect. The relationship with France is relatively close; for example, the defense system of Saint-Martin is France's responsibility. In general, Saint-Martin has the same rules as the departments and regions in France (European Parliament, 2018).

Sint Maarten, on the other hand, has an autonomous status within the Kingdom of the Netherlands. Autonomy means that Sint Maarten has its government, education, and legal system, independent of that from the Kingdom of the Netherlands (Algemene Rekenkamer, 2018). The Dutch government can only give Sint Maarten advice and support if they ask for it (Righton & Meijer, 2017). The Dutch government cannot make any decisions for Sint Maarten or intervene whenever they like (Righton & Meijer, 2017). The Dutch government is only responsible for guaranteeing legal security, good governance, and the observance of human rights on the Caribbean parts of the Kingdom of the Netherlands (Rijksoverheid, u.d.).

For the category 'relief,' there was no significant difference between the two governments' actions. Both governments had the same intentions for their short-term emergency response and carried it out with the same success.

The Dutch government helped relief aid by sending resources to local authorities to maintain public order and repair the damaged infrastructure. Other resources were spent on basic needs like housing, food, and drinking (Algemene Rekenkamer, 2018). Besides the

deployment of the armed forces and police officers, the Dutch government set aside EUR 55 million for both Sint Maarten, Saba, and Sint Eustatius to use emergency relief. The hardest part about relief aid for the Dutch government was the absence of communication in the first couple of days after Irma. It took days to figure out how much damage Irma had done and figure out what relief resources the islanders needed. Sint Maarten is far from the Netherlands; it took a couple of days for navy vessels and other military to get to Sint Maarten. Another feature that made relief aid difficult is the time difference. Whenever the workday would end in the Netherlands, a new day began in Sint Maarten—making communication, whenever possible, difficult between the government and military troops on the ground. By January 2018, the emergency phase stopped. By that time, the restoration of clean drinking water was finished for almost all homes, and in 99% of the buildings, electricity was restored.

In Saint-Martin, the relief projects set up by the French government consisted of helping the islanders who fell victim to Irma and had no resources left. The government provided free tarpaulins, free prefabricated houses, rations of food, bottles of clean drinking water, and water fountains; so the people in Saint-Martin could still get their basic needs. The delivery of relief resources happened in the weeks following the passage of Irma. Not only free resources were handed out to the people affected by Irma, but family members also got money from several organizations such as CAF and CGSS functioning as an allowance. The pre-positioned the navy and other armed forces to make sure inhabitants could get relief aid and minimum access to vital resources. The military could also provide life-saving equipment, like drinking water supplies, electricity, and communication networks. All those things are necessary in order to set up effective relief and rescue aid. There was enough provision of the relief products, and many islanders could profit from this. Like with the Dutch government, the time difference between France and Saint-Martin made setting up relief aid difficult. Whenever the workday would end in France, a new day would begin in Saint-Martin—making communication difficult between the government and military troops on the ground and the local delegates.

Emergency response challenges

Out of the four challenges presented by Ansell, Boin & Keller – (1) coping with uncertainty, (2) providing surge capacity, (3) organizing a response, (4) communicating with the public - coping with uncertainty, providing surge capacity and organizing a response turned out to be the most important challenges for the French and Dutch government. Communicating with the public was also only slightly present, but not in such a way that it was an actual

challenge. The main reason that all three challenges were present, was that both governments did not reside directly on Saint Martin. They had to send military personnel and police officers to the island to find out what was going on in the first few days after Irma. Coordinating the emergency response when the government is not actually on the ground turned out to be difficult. It is hard to know what goods to send and which decisions to make when it is impossible to speak to public administrators and the people affected. The state government can only rely on the people they do get to speak to set up resources needed for the rescue and relief projects. Sending immediate help in the first days after a disaster can make life changing differences for the population affected. In the case of Irma the emergency response could not be set up right away, since there was no access to the airports to get resources into the country or there was no electricity to get in contact with (international) organizations that could help with the emergency response.

Out of the four challenges presented by Drabek - (1) localism, (2) lack of standardization, (3) unit diversity and (4) fragmentation- this thesis concludes that unit diversity and fragmentation were mostly present in the emergency response from both governments. Unit diversity means that the traditional agencies help local communities, such as the Red Cross, the fire department, the police department, law enforcement (Drabek, 1985: p.86). When groups of volunteers start working together with local and state actors, this expands the range of unit diversity. After Irma hit Saint Martin, both the French and Dutch governments sent emergency relief to meet the population's basic needs. Both governments gave financial aid, but the distribution of financial aid was different between both countries. The French government gave money directly to the inhabitants of Saint-Martin, sometimes through the use of local organizations. The Dutch government set their financial aid money aside in a trust fund managed by the World Bank. The trust fund money can only be used when both the Dutch and local government of Sint Maarten give their consent. The last challenge is fragmentation. Fragmentation entails recognizing the critical role that state governments can play in assisting local units in overcoming deficiencies. The expectation is that the Dutch government had to assist the local government of Sint Maarten in overcoming deficiencies. The Dutch government set out conditions before Sint Maarten could receive any money from the Dutch government. Before receiving funds, this means that the local government has to change in order to receive rescue and relief aid.

5.1 Recommendations and reflection

By analyzing the differences in the short-term emergency response from the French and Dutch governments, this thesis has concluded the differences in effectiveness in the short-term emergency response between France and the Netherlands. Based on the conclusions, future studies could address the issue of long-term emergency response instead of the short-term. I feel like a big difference in the effectiveness of the emergency response could also be found long-term. There are many news articles that state some roads have not yet reopened that connect the French and Dutch side, some hotels that have not reopened again, and Irma's visible damage still present on Saint Martin. In December 2019, there were riots on the French part of the island. The protest's focus was the lack of a solution for the polluted drinking water and the risk assessment plan with which the French government uses it to determine the red zones. The red zones are the areas in Saint-Martin with high flood risk. This shows that long-term emergency response focussed on recovery and reconstruction is still lacking in certain places. This can be an exciting topic for future studies on the same topic of emergency response in Saint Martin after hurricane Irma.

The reflection on my methodology is that my methods could have more broad. For this research, I only used content analysis as my method for the analysis, while interviews could have been part of the method. Conducting interviews could be beneficial in future research on this topic. It gives a lot more inside information that is not in the official governmental reports. This information is beneficial in a comparative study where the results are in detail. Conducting interviews could have raised the validity of this thesis.

There are also limitations to this thesis. The first is the sample size. The sample size is small, with only two cases. Widening the sample size would increase the generalizability of this research. The second limitation is the timing of the research. As I said before, I could not conduct interviews due to timing issues and the Coronavirus. If my timing would have been better, and there was no global pandemic, I could have conducted interviews. This would have dramatically increased the validity of the thesis. The third is the used method. In this case, the used method is content analysis. With the way that I structured my content analysis, I had to give values to my unit of analysis to determine the effectiveness. The given values are based on the perception of the researcher and are very subjective. My perception could change from day to day and might also be different from another person's perception. The final limitation is the language. I am fluent in Dutch, but not in French. Therefore, it is harder for me to analyze the French documents and inquiry reports. The thesis is written in English; most of the

documents are either in French or Dutch. This makes for possible inconsistencies in the translations. This inevitable within this research, but with good translating software as Deepl, the inconsistencies are kept to a minimum.

Chapter 6. References

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